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B4200(PN263) Monochrome LED Page Printer Maintenance Manual

(ODA/OEL/AOS)

[Rev. 5]

3

Related drawings

2

Drawing No.	Name
42156801TL	B4200(ODA/OEL/AOS) Disassembly for Maintenance
42156801TR	B4200(ODA/OEL/AOS) RSPL

1

BOM		Use for		Certification Body	
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[illegible]

PREFACE

This Maintenance Manual describes the field maintenance methods for B4200 Monochrome LED Page Printers.

This manual is written for use by service persons. Please note that you should refer to the Printer Handbook for the handling and operating methods of the equipment.

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1. CONFIGURATION

1.1 System Configuration

B4200 consists of control and engine blocks in the standard configuration, as shown in Figure 1-1.

In addition, the options marked with asterisk(*) are available.

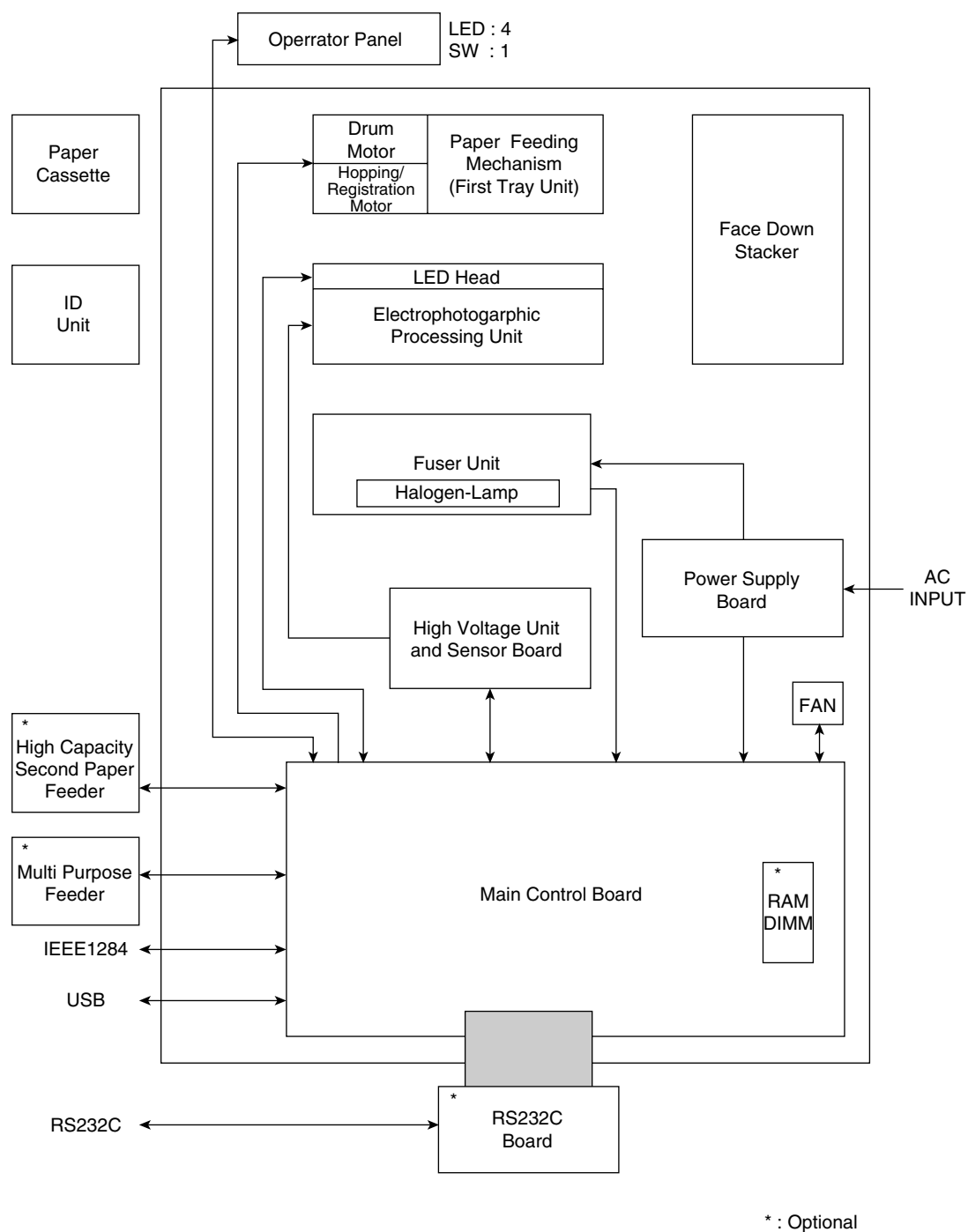


Figure 1-1

1.2 Printer Configuration

The printer unit consists of the following hardware components:

- Electrophotographic Processor
- Paper Feeder
- Controller
- Operator Panel
- Power Supply Unit

The printer unit configuration is shown in Figure 1-2.

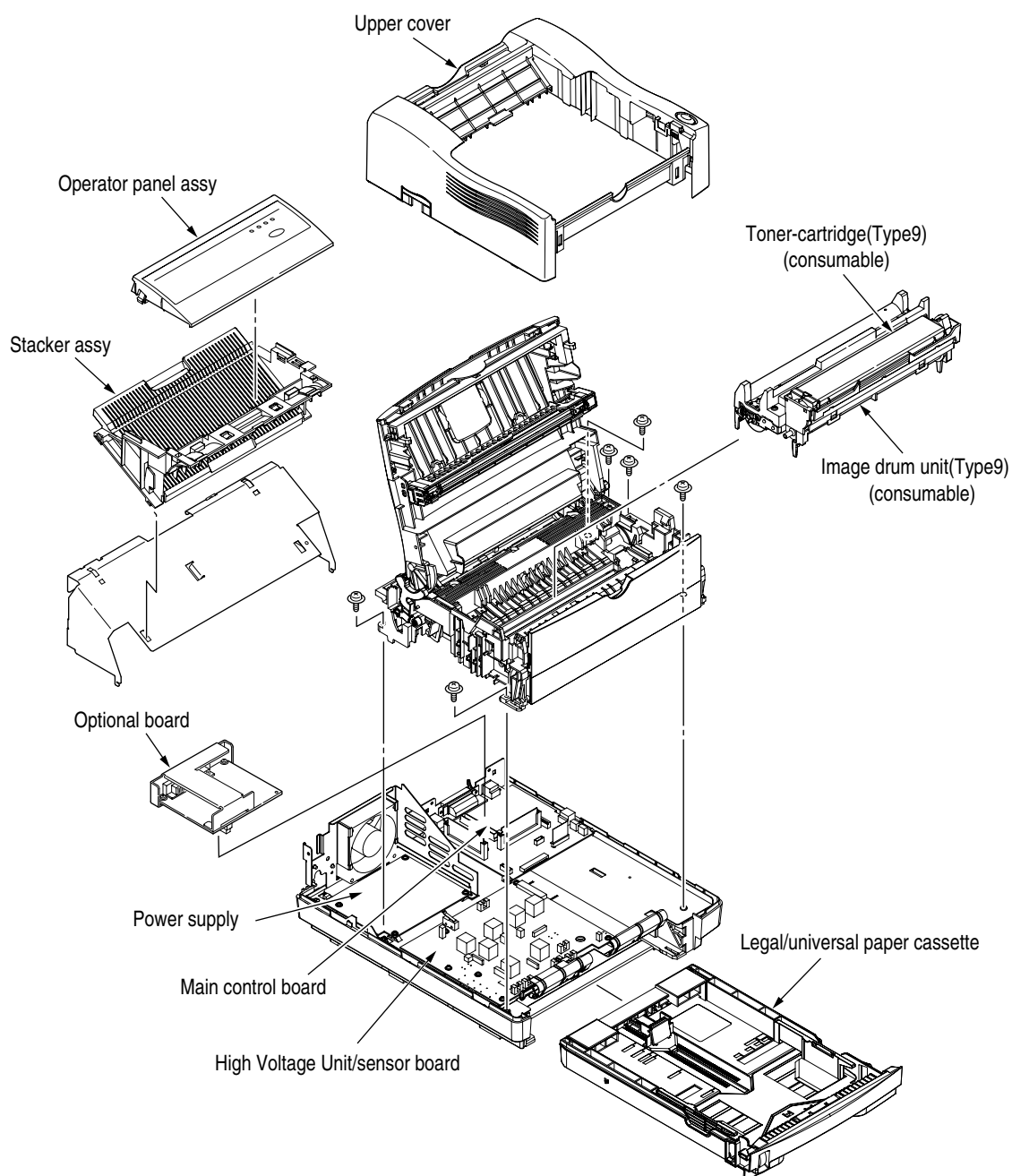
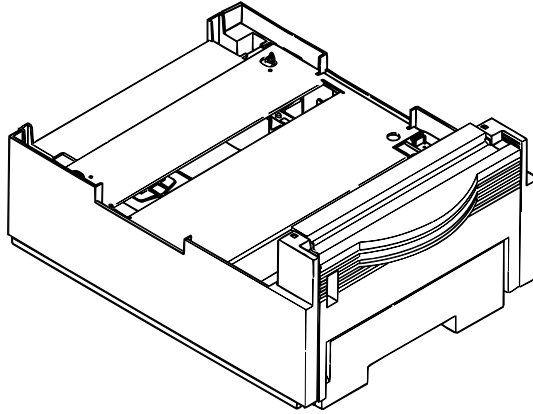


Figure 1-2

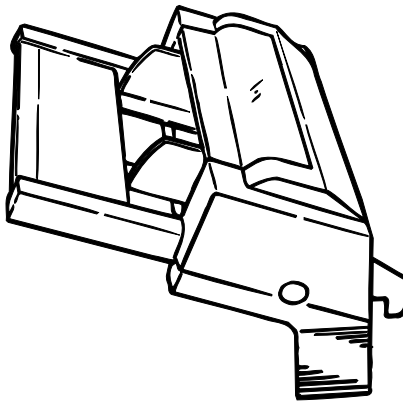
1.3 Optional Configuration

The options shown below are available for use with B4200. These are available separately from the printer unit.

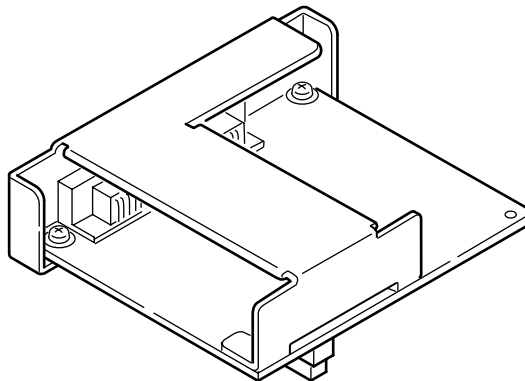
(1) High Capacity Second Paper Feeder



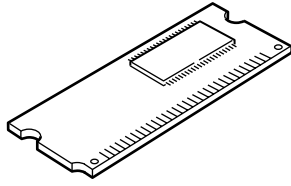
(2) Multi Purpose Feeder



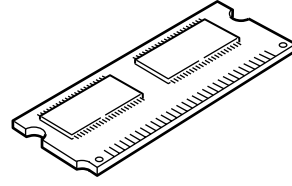
(3) RS232C Serial Interface Board



(4) SDRAM DIMM

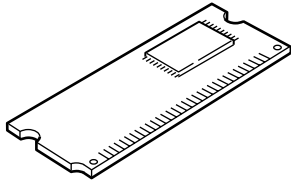


(i) 16MB

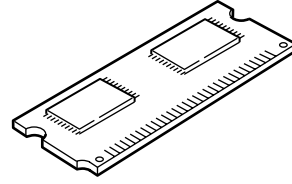


(ii) 32MB

(5) Flash DIMM



(i) 8MB



(ii) 16MB

1.4 Specification

(1) Type	Desktop
(2) External dimensions	Height 7.9" (200 mm) Width 14.0" (355 mm) Depth 15.7" (400 mm)
(3) Weight	Approx. 9 kg
(4) Developing method Exposing method	Dry electrophotography LED stationary head
(5) Paper used	<p><Type></p> <ul style="list-style-type: none"> Standard paper <ul style="list-style-type: none"> Xerox 4200 (20 lbs) Application paper (manual face-up feed) <ul style="list-style-type: none"> Label Envelope OHP paper (transparency) <p><Size></p> <ul style="list-style-type: none"> Standard sizes <ul style="list-style-type: none"> Letter Legal* [* Without Multi Purpose Feeder (Option)] Legal-13* Executive COM-9 ** COM-10** [** manual feed and Multi Purpose Feeder (option) only] Monarch** DL ** C5** A4 A5 B5 (JIS) A6 Applicable sizes <ul style="list-style-type: none"> Width : 3.5" to 8.5" (90 to 216 mm) Length : 5.8" to 14" (148 to 355.6 mm) <p><Thickness></p> <ul style="list-style-type: none"> Automatic feed : 16 to 28 lbs (60 to 105 g/m²) Manual feed : Label, OHP paper (transparency) Envelope (24 to 28 lbs)
(6) Printing speed	<p>Continuous printing : 19 pages per minute with Letter size paper. 18 pages per minute with A4 size paper. [Except, Multi purpose Feeder (11ppm)]</p> <p>Warm-up time : 35 seconds typical at room temperature [68°F (20°C), AC 120/230 V].</p> <p>First page print time : 6.0 seconds typical for the Letter size paper (6.2 seconds for the A4 size) after warm-up.</p>
(7) Paper feeding method	Automatic feed or manual feed
(8) Paper delivery method	Face down/face up
(9) Resolution	600 × 600 dots/inch 600 × 1200 dots/inch

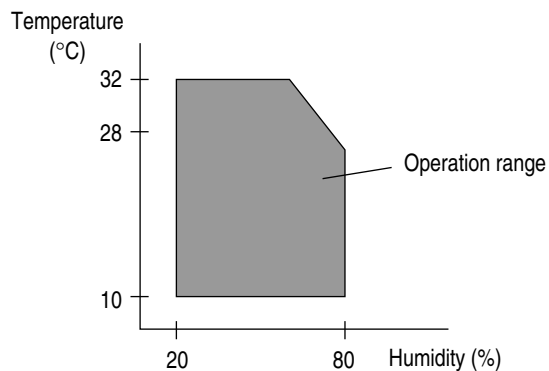
(10) Power input 120 VAC + 6%, -10%
 230 VAC \pm 10%

(11) Power consumption		120VAC	230VAC
Peak	:	Approx. 700W	Approx. 700W
Typical operation	:	Approx. 340W	Approx. 350W
Idle	:	Approx. 66W	Approx. 68W
Power save mode	:	Approx. 8W	Approx. 9W
(Without option)			
Power save mode	:	Approx. 12W	Approx. 13W
(With full option)			

(12) Temperature and humidity

	In operation	Power off mode	During Storage	Unit
Temperature	50-90 (10-32)	32-110 (0-43)	14-110 (-10-43)	°F (°C)
Humidity	20-80	10-90	10-90	%RH
Maximum wet bulb temperature	77 (25)	80.4 (26.8)	—	°F (°C)
Minimum difference between wet and dry bulb temperatures	35.6 (2)	35.6 (2)	—	°F (°C)

1. Storage conditions specified above apply to printers in packed condition.
2. Temperature and humidity must be in the range where no condensation occurs.



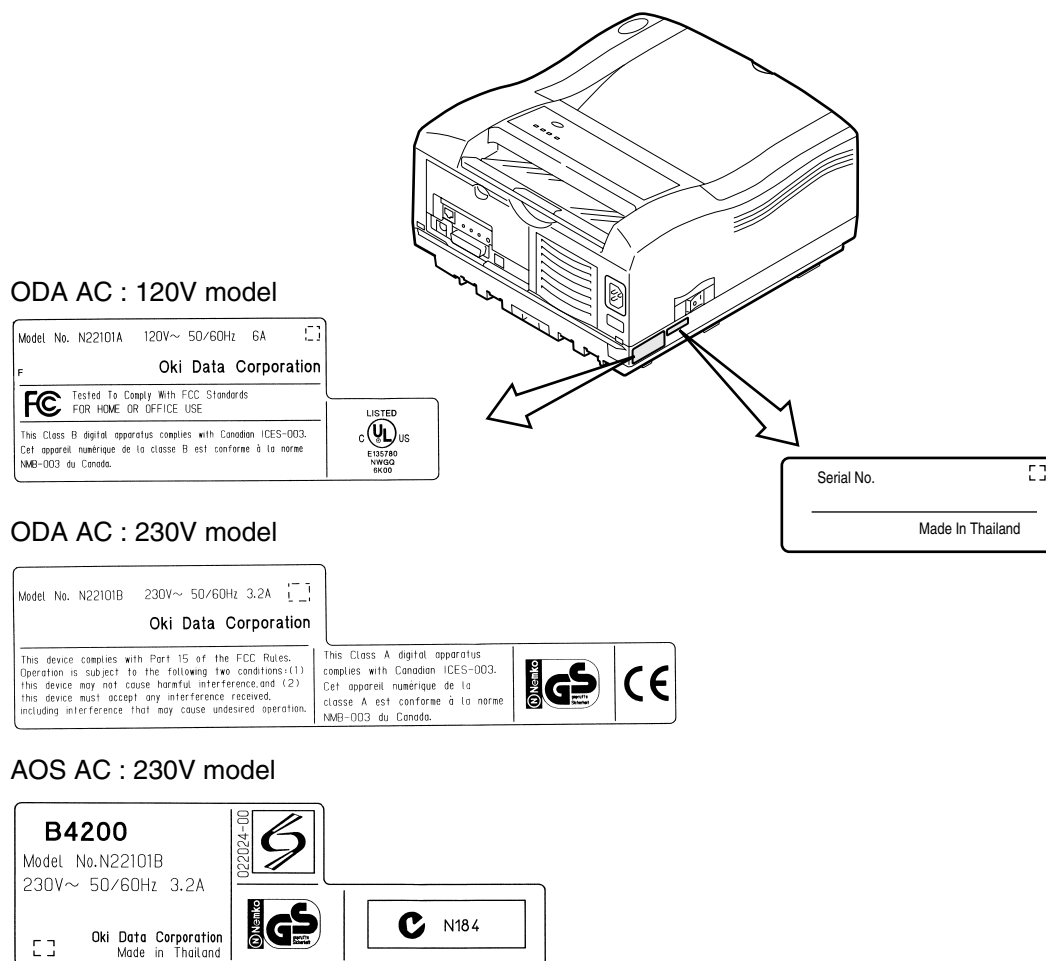
(13) Noise	During operation	: 53 dB (A) or less
	Standby	: 38 dB (A) or less
	Quiet mode	: Back ground level

(14) Consumables	Toner cartridge kit	2,500 (5% duty) 6,000 (Optional 6K Toner 5% duty)
	Image drum cartridge	25,000 (at continuouts printing) 17,000 (3 page/job) without Power Save 11,000 (1 page/job) without Power Save 7,000 (1 page/job) with Power Save (Minimum)

1.5 Safety Standards

1.5.1 Certification Label

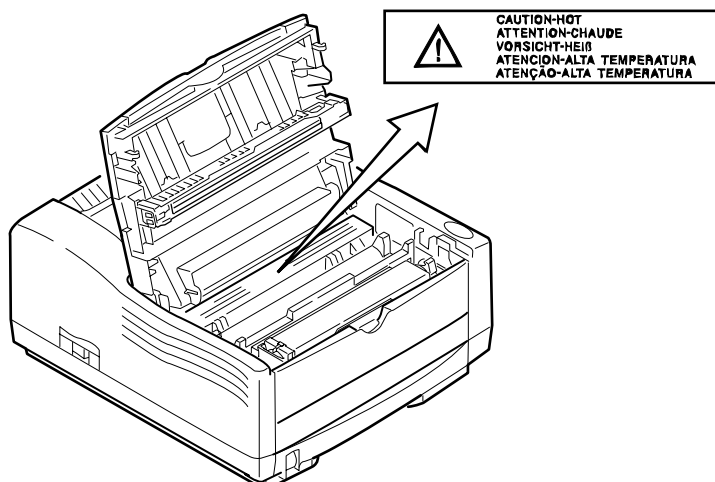
The safety certification label is affixed to the printer in the position described below.



1.5.2 Warning Label

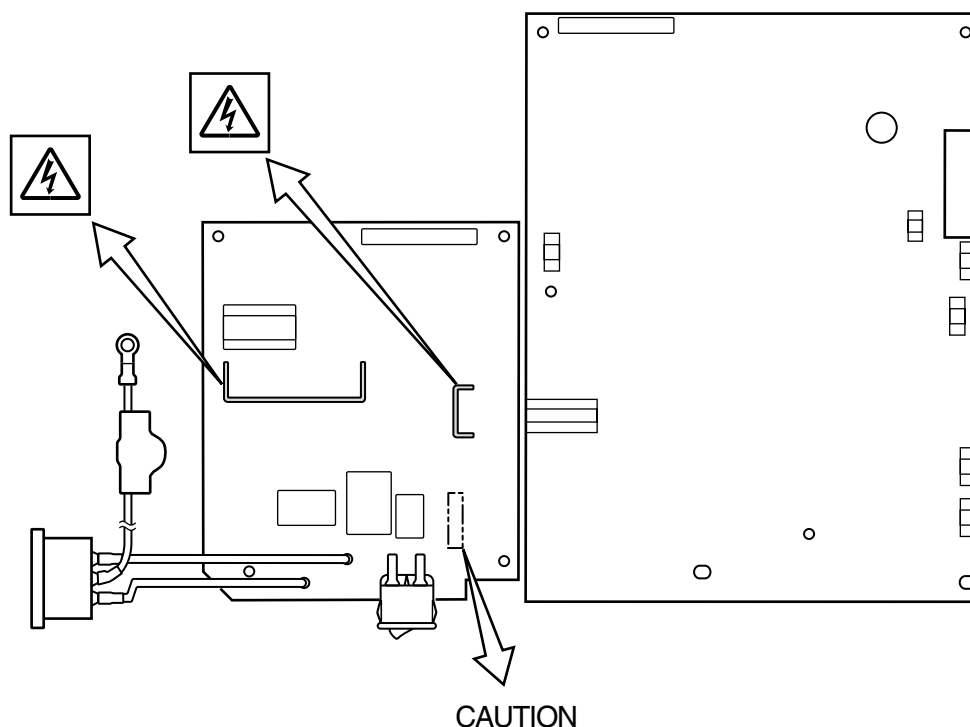
The warning labels are affixed to the sections which may cause bodily injury.

Follow the instructions on warning labels during maintenance.



1.5.3 Warning/Caution Marking

The following warning and caution markings are made on the power supply/sensor board.



ENGLISH

Heatsink and transformer core present risk of electric shock. Test before touching.

FRENCH

Le dissipateur thermique et le noyau du transformateur présentent des risques de choc électrique. Testez avant de manipuler.

SPANISH

Las disipadores de calor y el núcleo del transformador pueden producir un choque eléctrico. Compruebe antes de tocar.

PORTUGUESE

O dissipador de calor e o núcleo do transformador apresentam risco de choque elétrico. Teste antes de tocar.

ENGLISH

Circuits may be live after fuses open.

FRENCH

Il se peut que les circuits soient sous tension une fois que les fusibles ont été retirés.

SPANISH

Los circuitos pueden estar activos una vez que se hayan abierto los fusibles.

PORTUGUESE

Os circuitos podem estar energizados após os fusíveis se queimarem.

2. PARTS REPLACEMENT

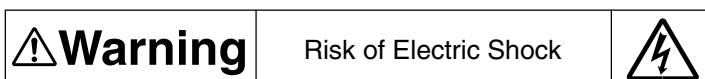
The section explains the procedures for replacement of parts, assemblies, and units in the field. Only the disassembly procedures are explained here. For reassembly, reverse the disassembly procedure.

2.1 Precautions for Parts Replacement

(1) Before starting to replace parts, remove the AC cord and interface cable.

(a) Remove the AC cord in the following sequence:

- i) Turn off ("o") the power switch of the printer
- ii) Disconnect the AC inlet plug of the AC cord from the AC receptacle.
- iii) Disconnect the AC cord and interface cable from the printer.

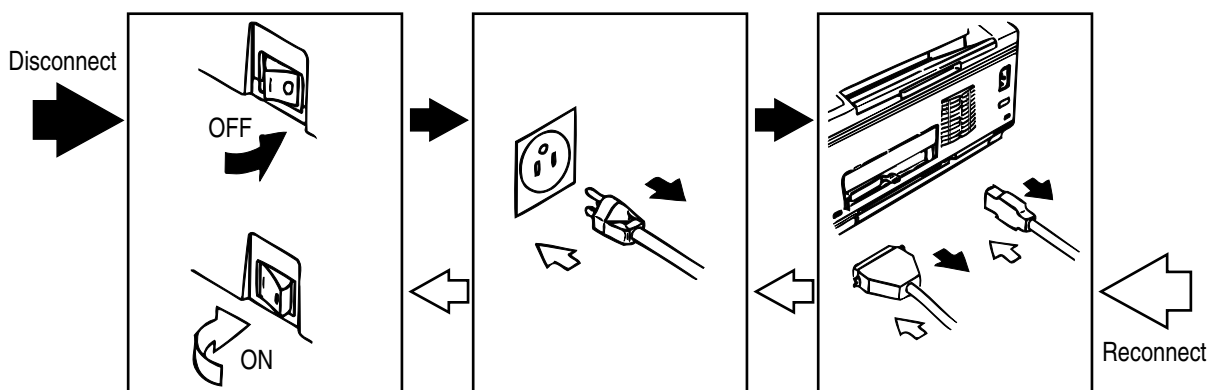


There is a risk of electric shock during replacement of the low voltage power supply. Use insulating gloves or avoid direct contact with any conducting part of the power supply, and caution should be exercised during replacement.

The capacitor may take one minute to complete discharge after the AC cord is unplugged. Also, there is a possibility that the capacitor doesn't discharge because of a breakage of the PCB, etc., so remember the possibility of electric shock to avoid electric shock.

(b) Reconnect the printer in the following procedure.

- i) Connect the AC cord and interface cable to the printer.
- ii) Connect the AC inlet plug to the AC receptacle.
- iii) Turn on ("I") the power switch of the printer.



(2) Do not disassemble the printer as long as it is operating normally.

(3) Do not remove parts which do not have to be touched; try to keep the disassembly to a minimum.

(4) Use specified service tools.

(5) When disassembling, follow the laid out sequences. Parts may be damaged if these sequences are not followed.

(6) Since screws, collars and other small parts are likely to be lost, they should temporarily be attached to the original positions during disassembly.

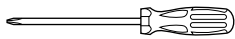
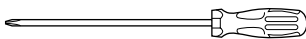

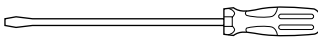
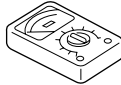
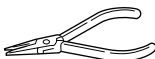
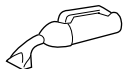

(7) When handling IC's such as microprocessors, ROMs and RAMs, or circuit boards, do not wear gloves that are likely to generate static electricity.

(8) Do not place printed circuit boards directly on the equipment or floor.

[Service Tools]

The tools required for field replacement of printed circuit boards, assemblies and units are listed in Table 2-1.

Table 2-1 Service Tools

No.	Service Tools	Q' ty	Application	Remarks
1	 No. 1-100 Philips screwdriver	1	2~2.5 mm screws	
2	 No. 2-100 Philips screwdriver	1	3~5 mm screws	
3	 No. 3-100 screwdriver	1		
4	 No. 5-200 screwdriver	1		
5	 Digital multimeter	1		
6	 Pliers	1		
7	 Handy cleaner	1		Refer to the following note.
8	 LED Head cleaner	1	Cleans LED head	

Note! Use a vacuum cleaner dealing with toner. Using a common vacuum cleaner may cause fire.

2.2 Parts Layout

This section explains the layout of main components of the equipment.

[Lower base unit]

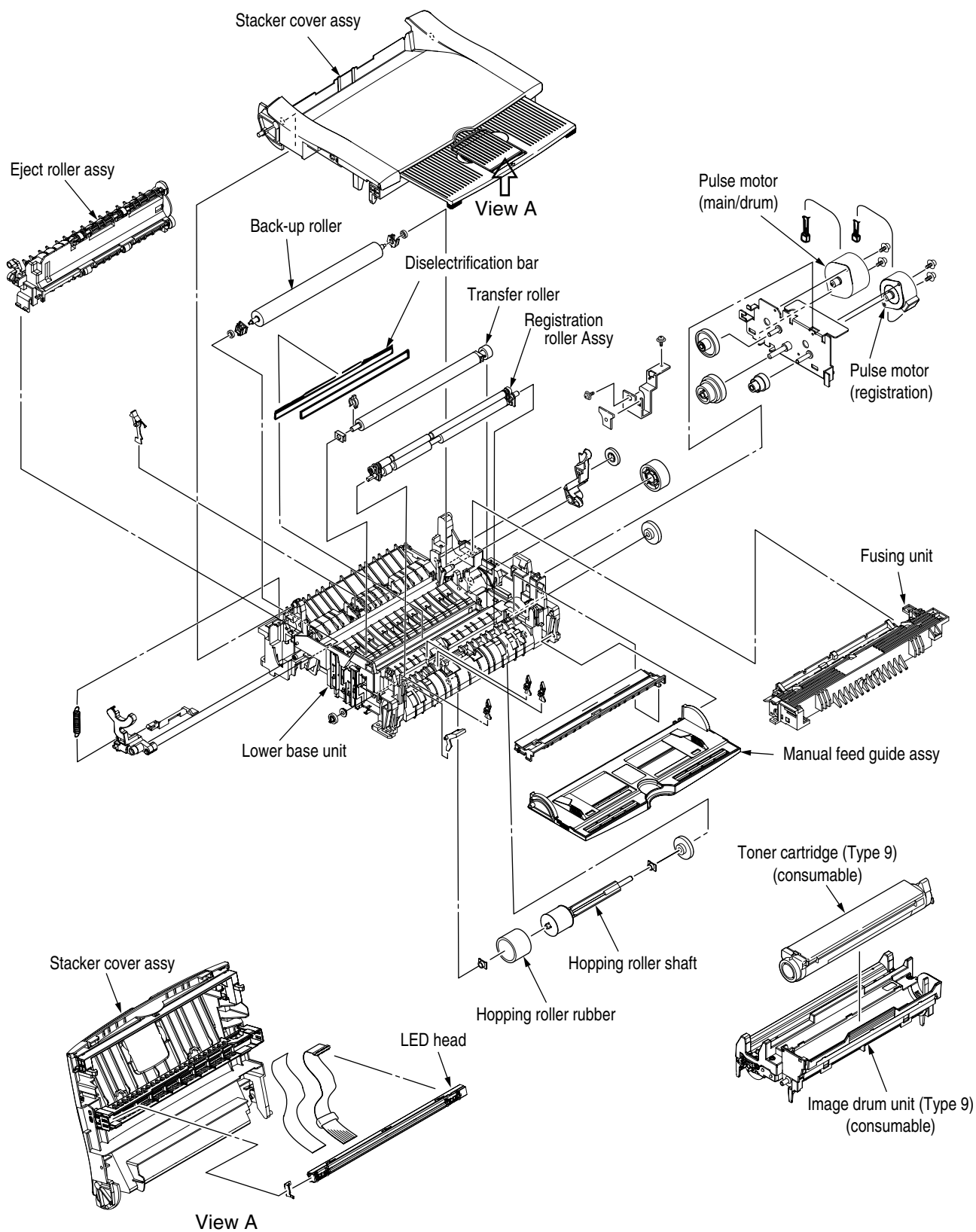


Figure 2-1

[Upper cover unit]

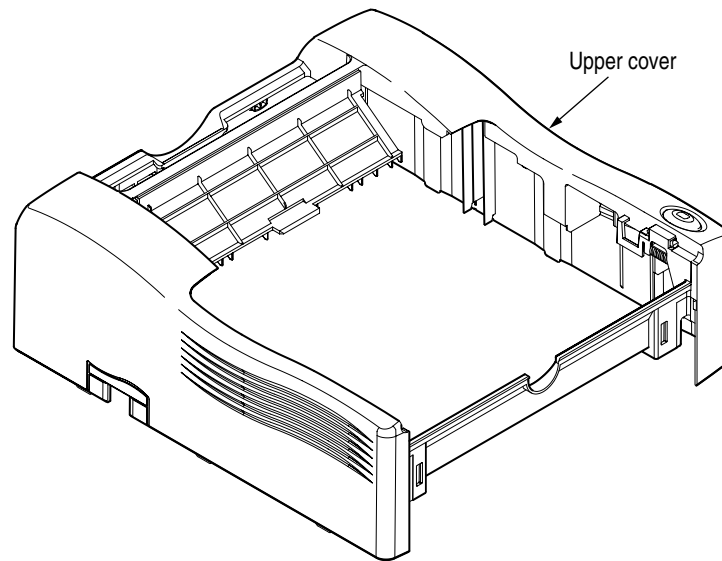


Figure 2-2

[Base unit]

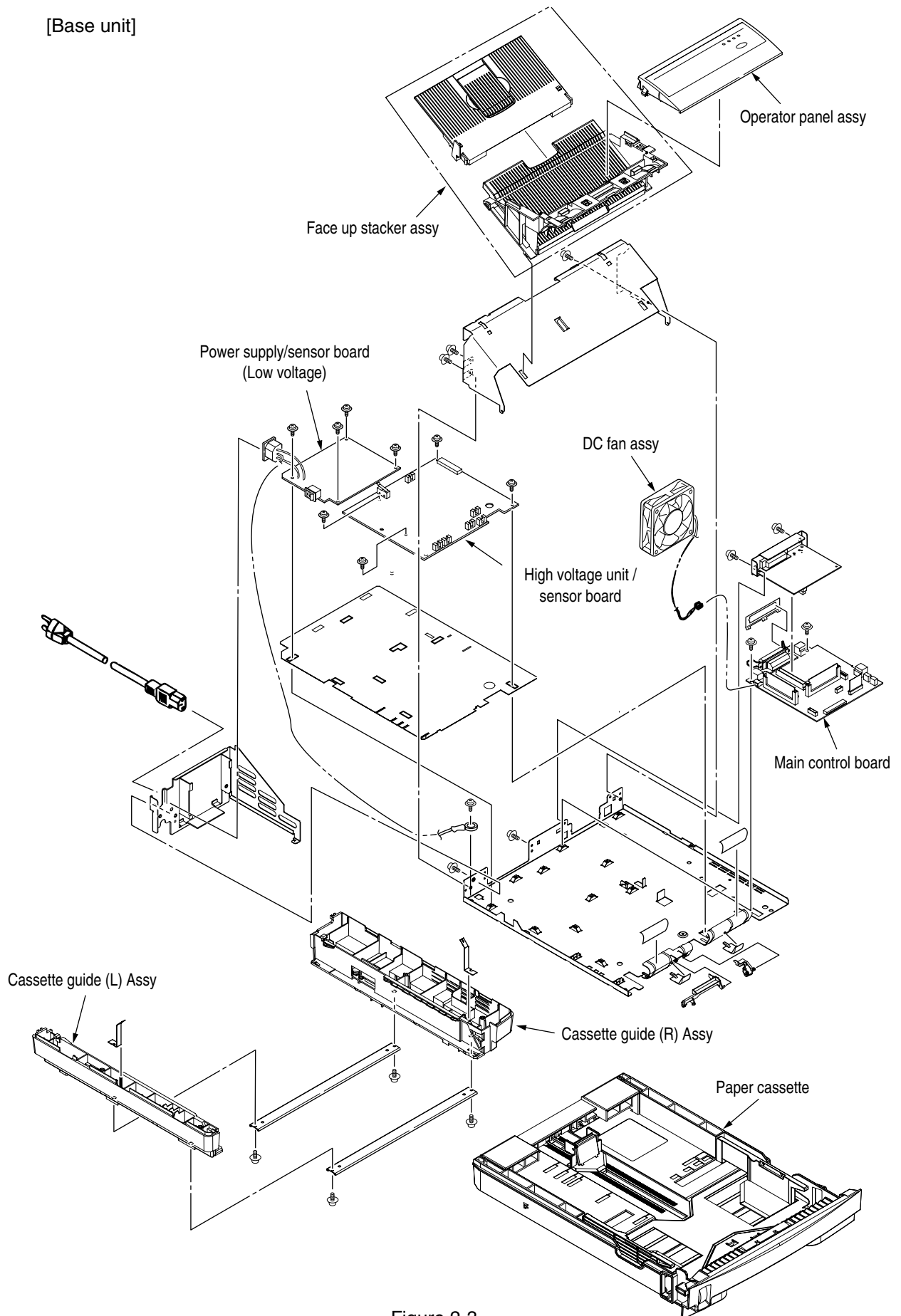
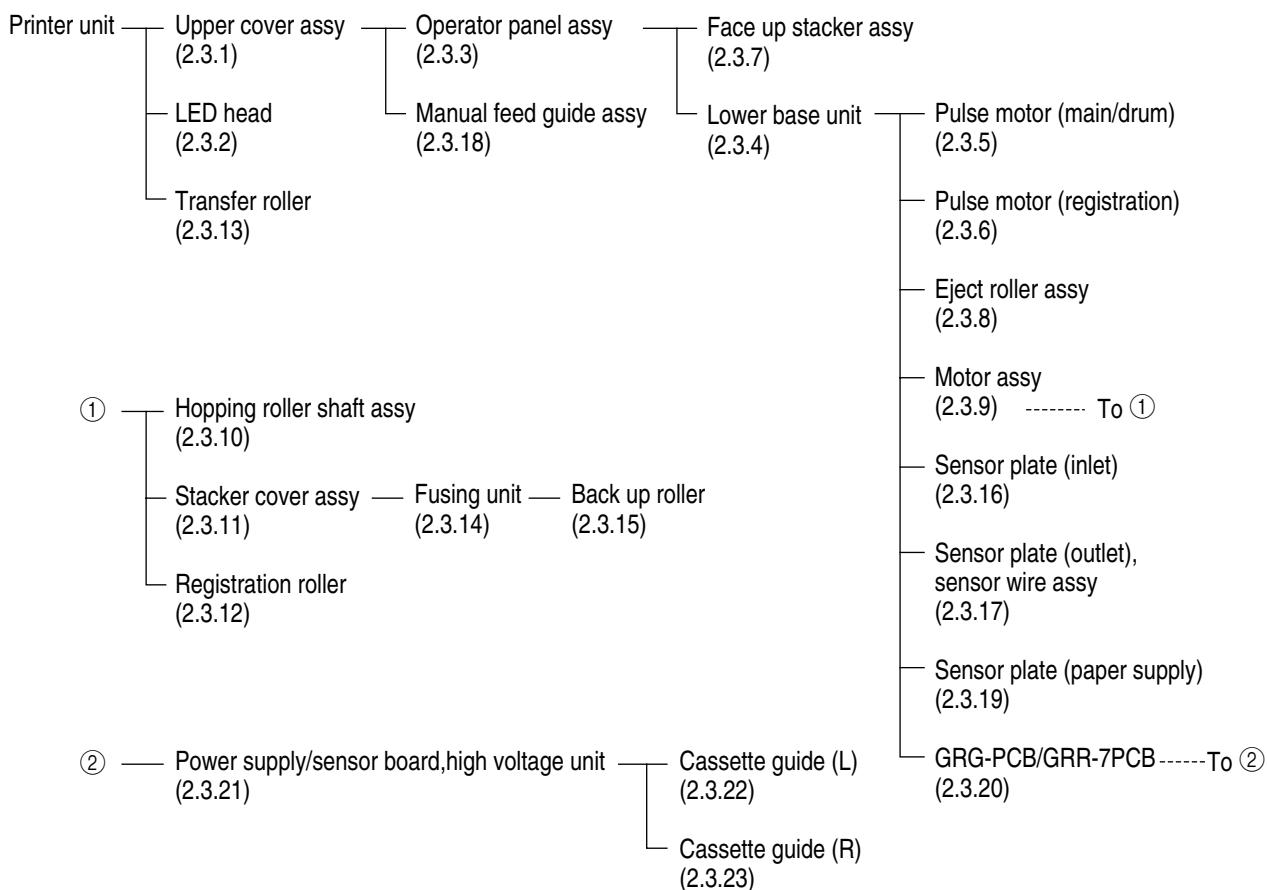


Figure 2-3

2.3 How to Change Parts

This section explains how to change parts and assemblies listed in the disassembly diagram below.

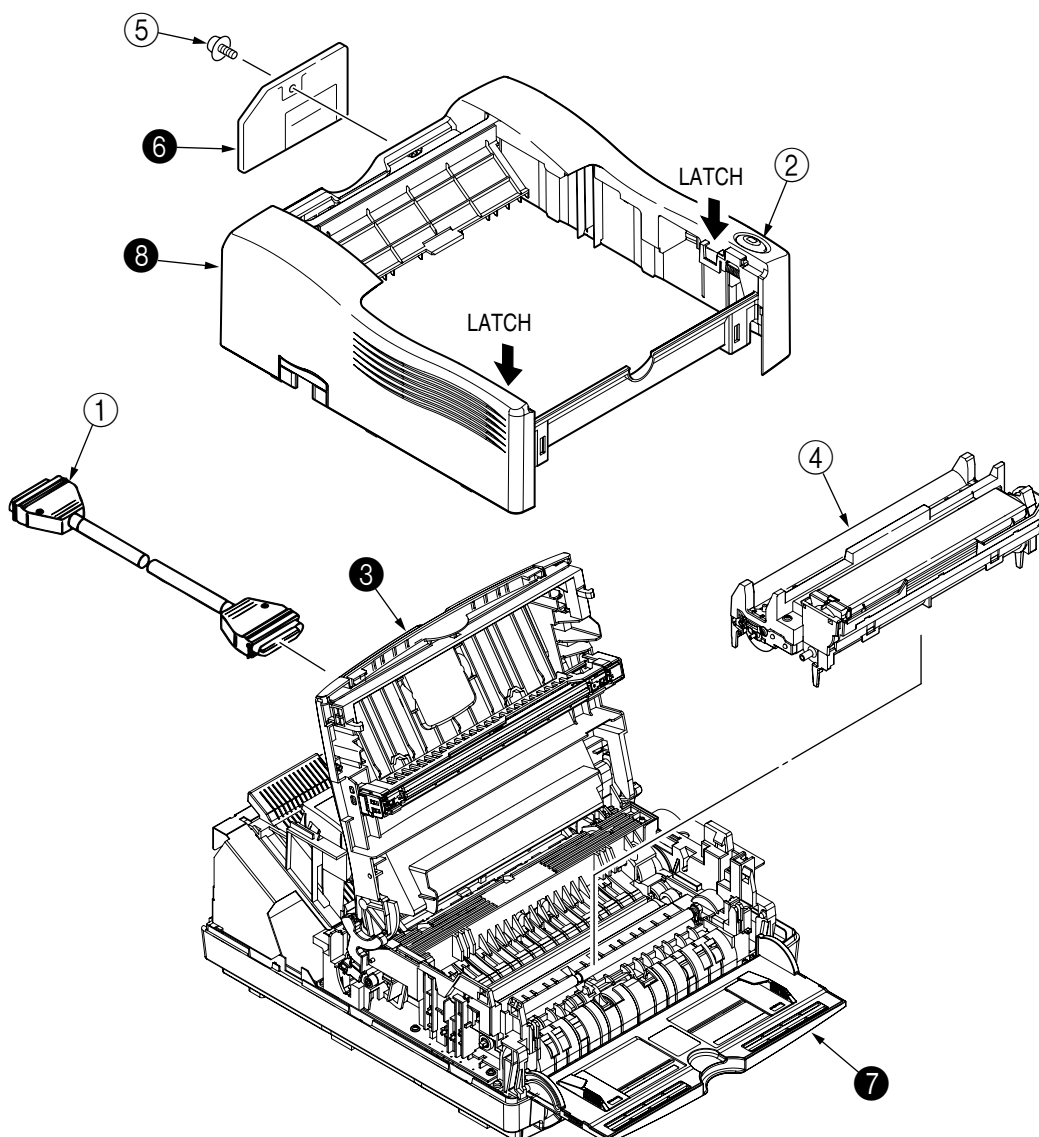
In the parts replacement procedure, those parts marked with the part number inside ● with white letters are RSPL parts.



2.3.1 Upper Cover Assy

- (1) With the power switch turned off, unplug the AC power cord from the outlet.
- (2) Disconnect the interface cable ①.
- (3) Press the button ② on right side of the Upper cover and open the stacker cover assy ③.
- (4) Take out the image drum unit ④.
- (5) Remove one screw ⑤, and remove the I/F cover ⑥ from the back side of the printer.
- (6) Open the manual feed guide assy ⑦. Unlock the latches at two locations on the front side. Lift the front side of the upper cover ⑧ up and unlock the latches at two locations on the back side. Lift and remove the upper cover assy ⑧.

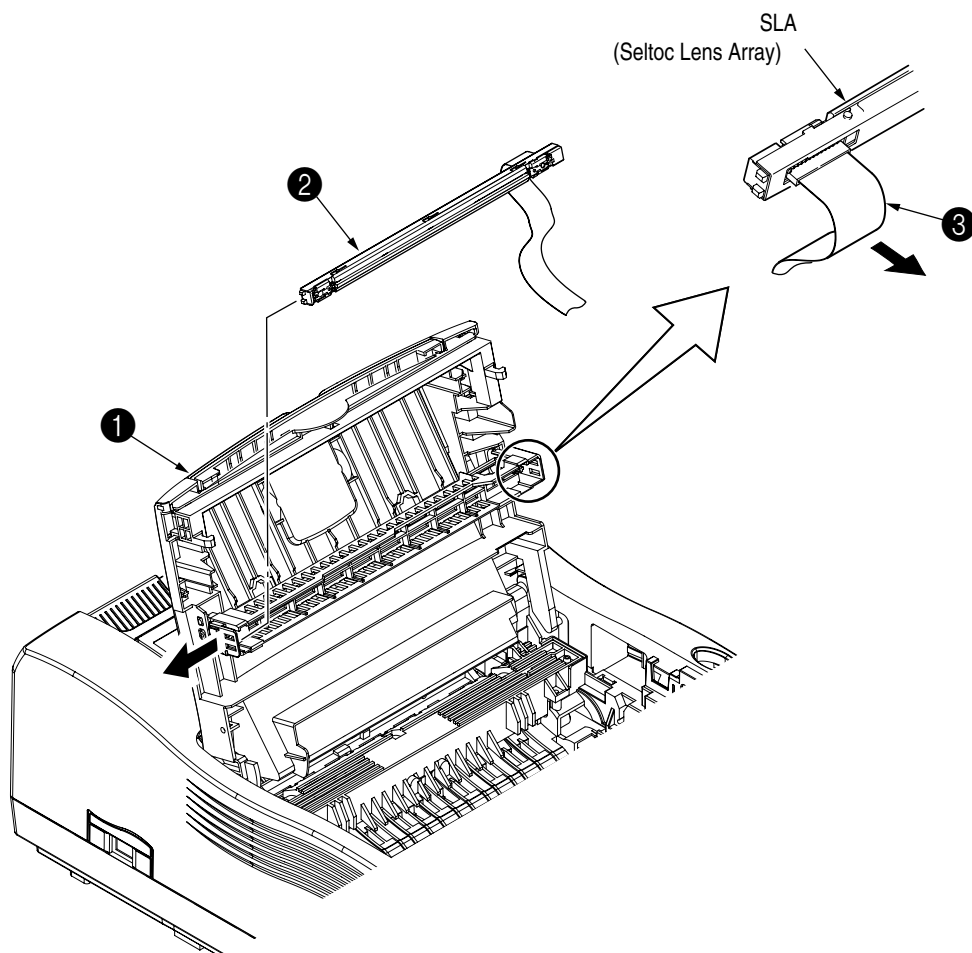
Note : When removing or reinstalling the upper cover, be careful not to get the motor cables tangled or caught.



2.3.2 LED Head

- (1) Press the button on right side of the upper cover and open the stacker cover assy ❶.
- (2) Open the hook section on the left side of the head holder and remove the LED head ❷.
- (3) Remove the head cable ❸ from the head connector.

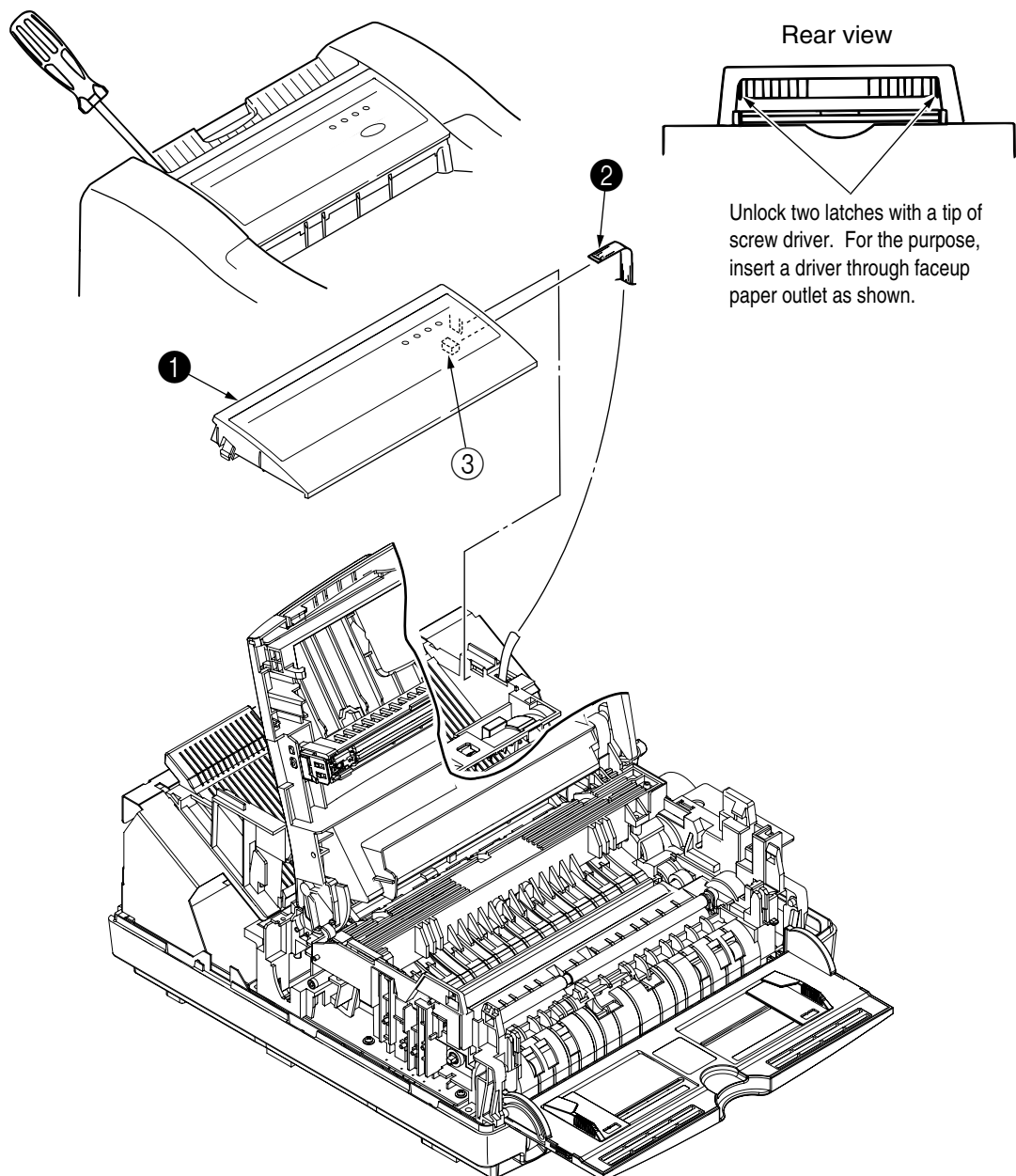
Note: Be sure not to touch directly or push on the SLA part of the LED head.



2.3.3 Operator Panel Assy

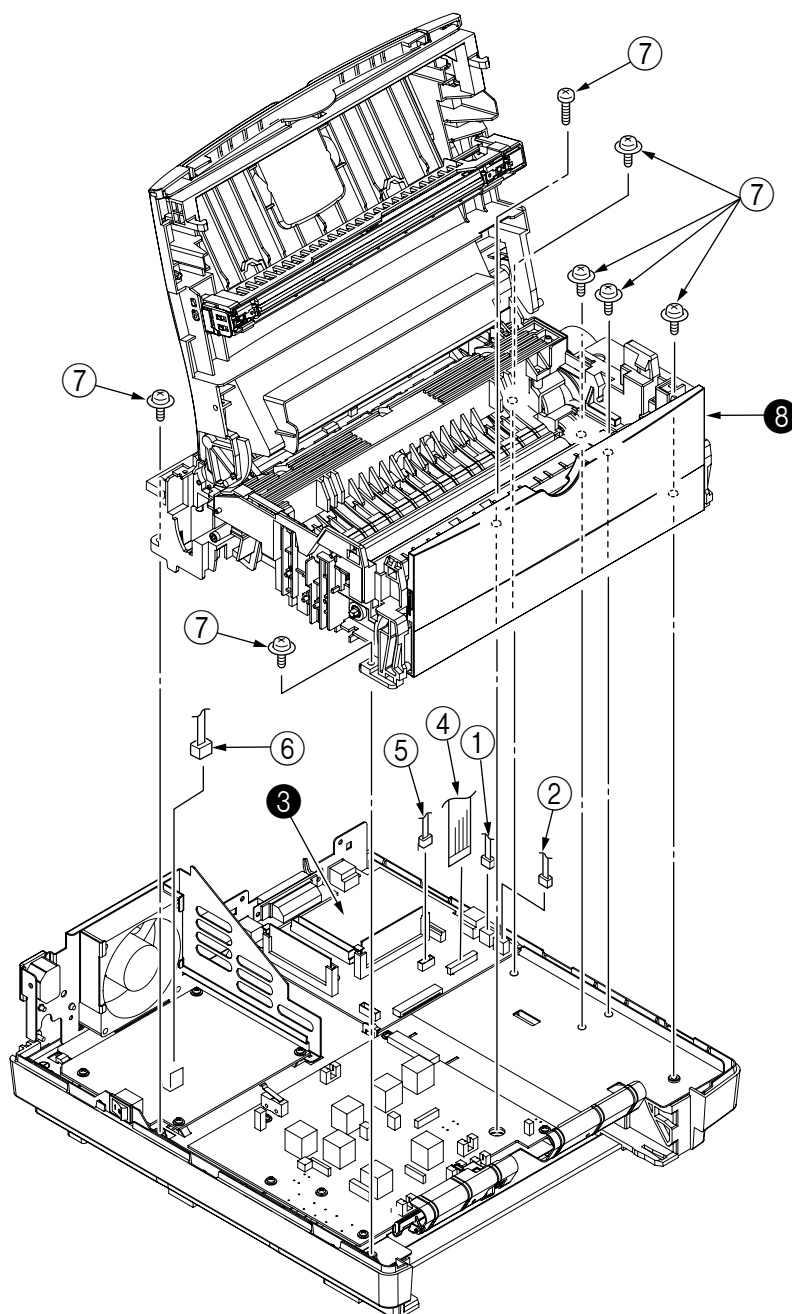
- (1) Unlock two latches on the upper cover from the rear side, lift the operator panel assy ❶ from the back and remove it.
- (2) Remove the Sumi card (operator panel) ❷ from the connector (CN1) ❸.

Note : You can remove the operator panel assy while the upper cover installed on the unit. However, it is much easier to remove the panel assy after removal of upper cover.



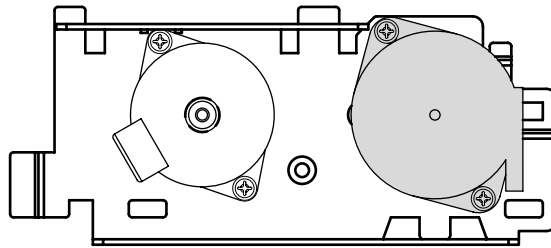
2.3.4 Lower Base Unit

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.7).
- (4) Remove the transfer roller assy (see 2.3.13).
- (5) Remove the connecting cables ① and ② of the pulse motors from the connectors (DM, RM) of the GRG-PCB ③.
- (6) Remove the LED head cables ④ from the connector (HEAD1).
- (7) Remove the Thermistor cable ⑤ from the connector (THERM).
- (8) Remove the connecting cable ⑥ of the heater from the connector (CN2).
- (9) Open the manual feed guide assy, remove seven screws ⑦, then remove the lower base unit ⑧.

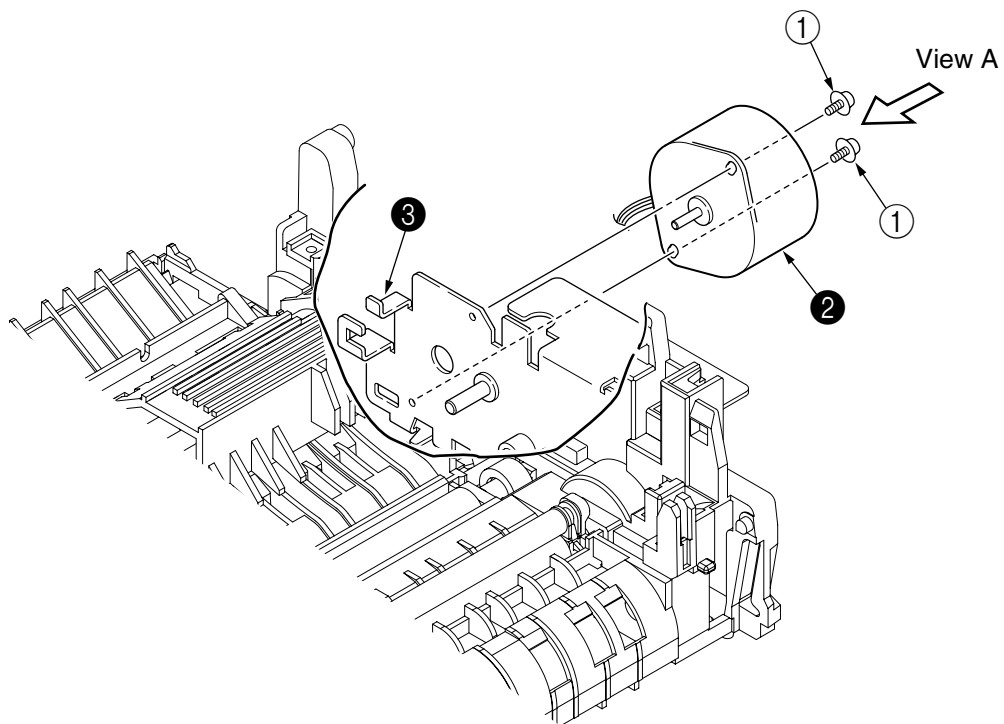


2.3.5 Pulse Motor (Main/Drum)

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the lower base unit (see 2.3.4).
- (3) Remove two screws ① and remove the pulse motor (main/drum) ② from the motor bracket ③.

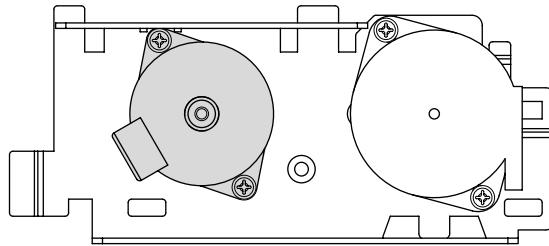


View A

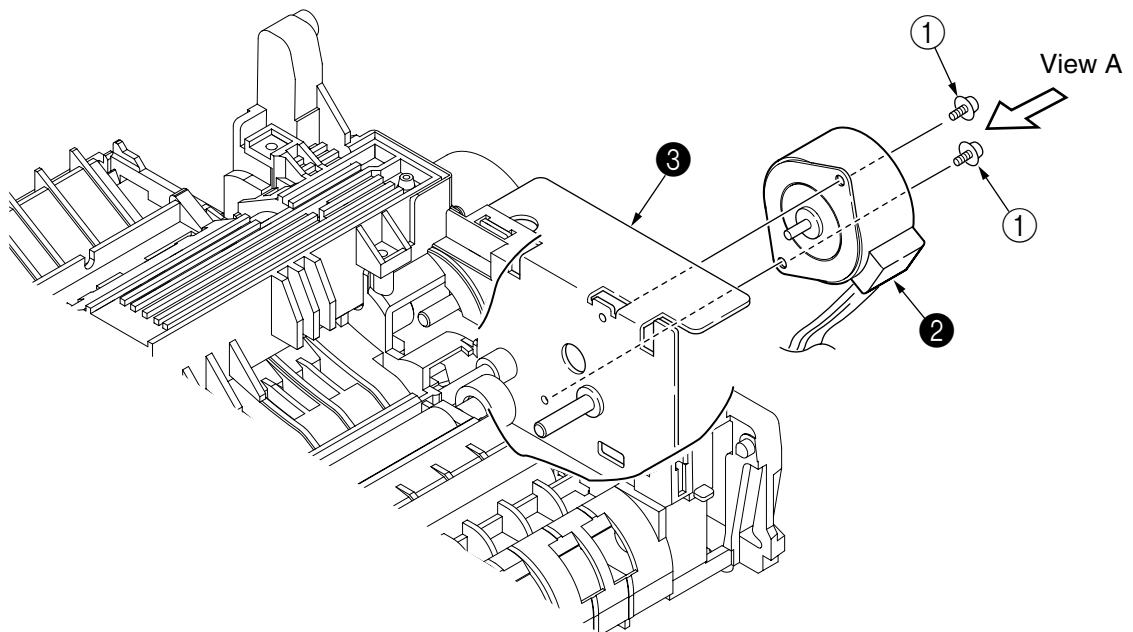


2.3.6 Pulse Motor (Registration)

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the lower base unit (see 2.3.4).
- (3) Remove two screws ① and remove the pluse motor (registration) ② from the motor bracket ③.

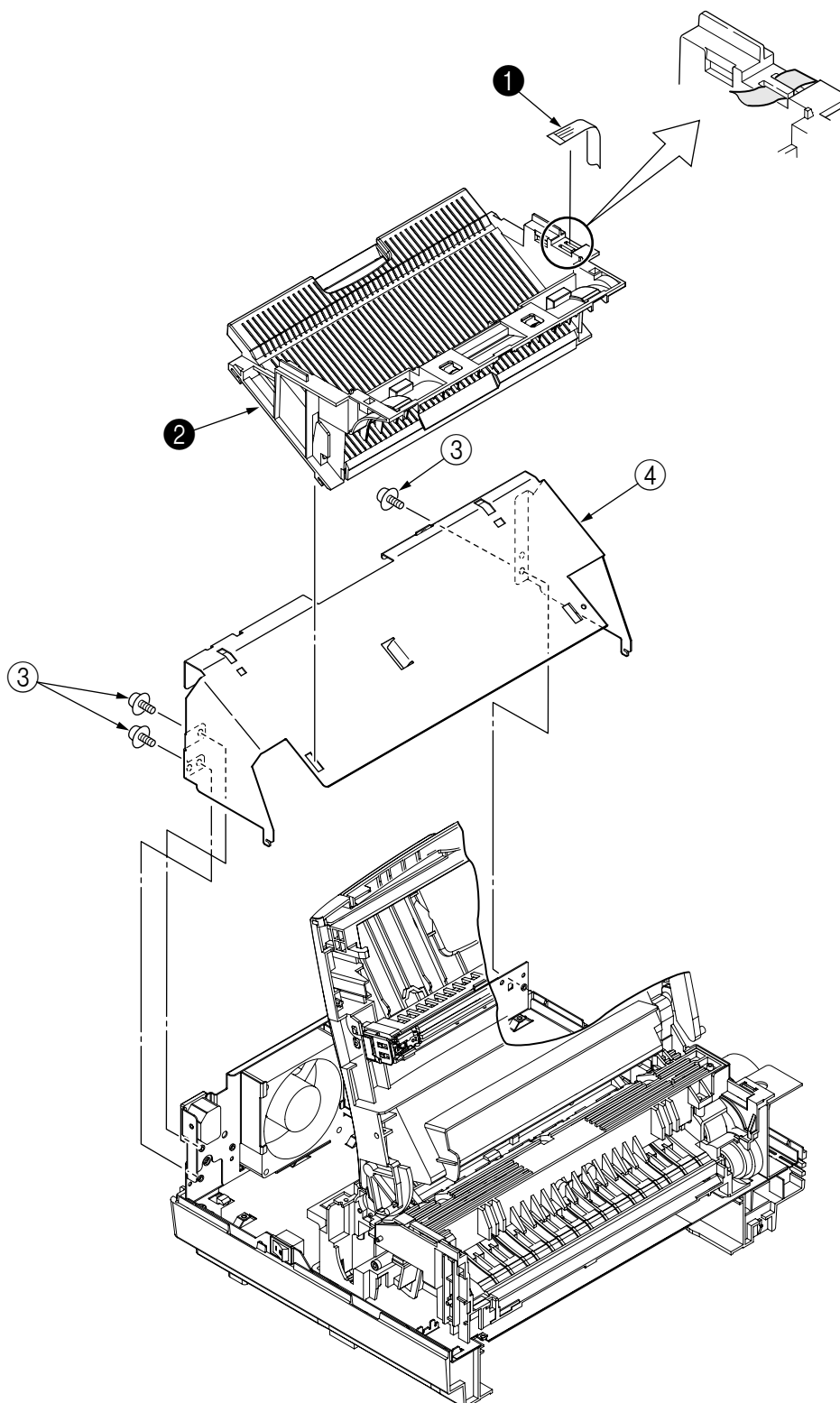


View A



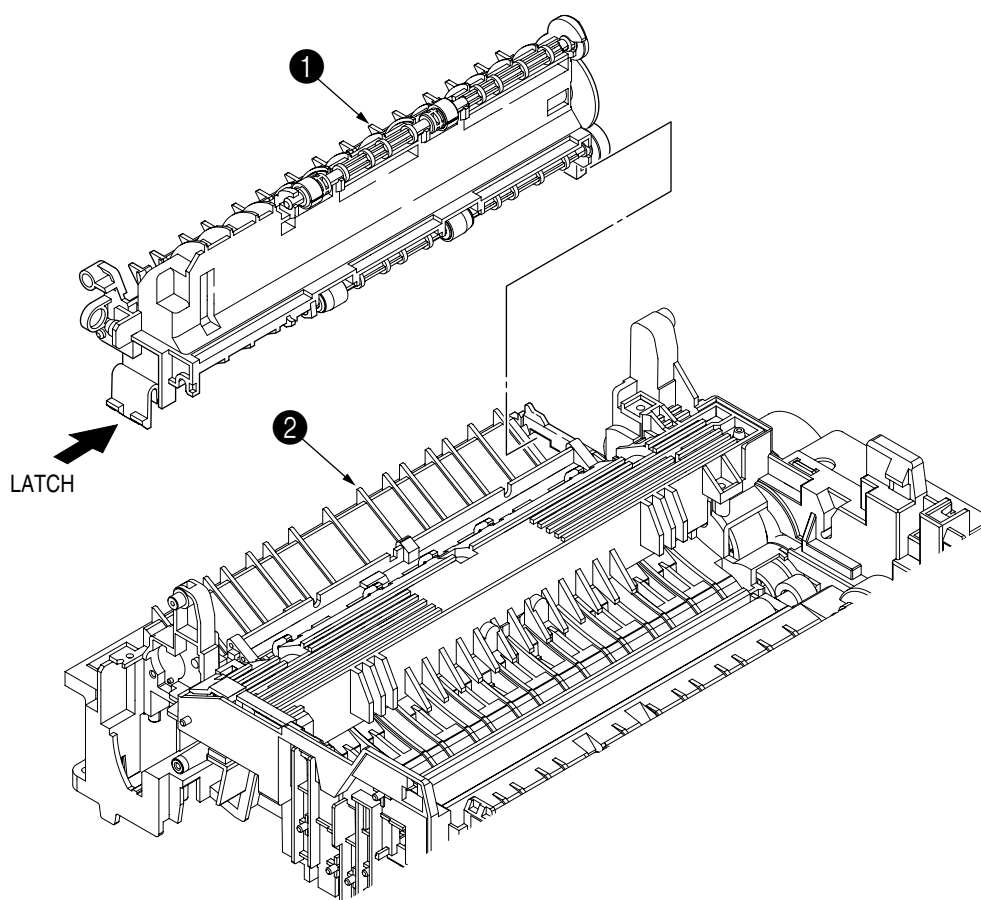
2.3.7 Face Up Stacker Assy

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the Sumi card (Operator panel cable) ❶ off the latch section of face up stacker ❷ .
- (4) Remove three screws ❸ and remove both the shield plate ❹ and face up stacker ❷ together.
- (5) Unlock the latches at two locations, and remove the face up stacker ❷.



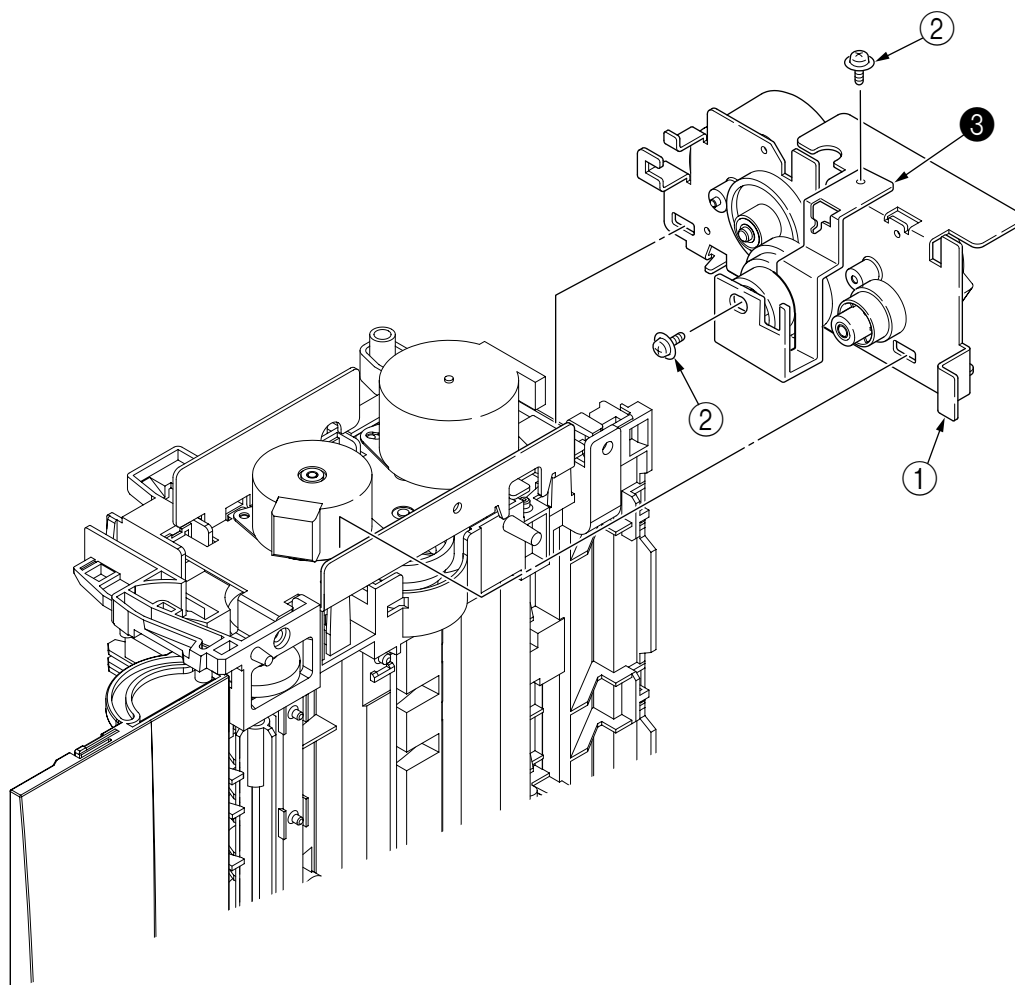
2.3.8 Eject Roller Assy

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.7).
- (4) Remove the stacker cover assy (see 2.3.11).
- (5) Disengage the eject roller assy ❶ from the lower base ❷ by pressing the latch section of the eject roller assy ❶ in the direction of the arrow shown below, and remove the eject roller assy ❶.



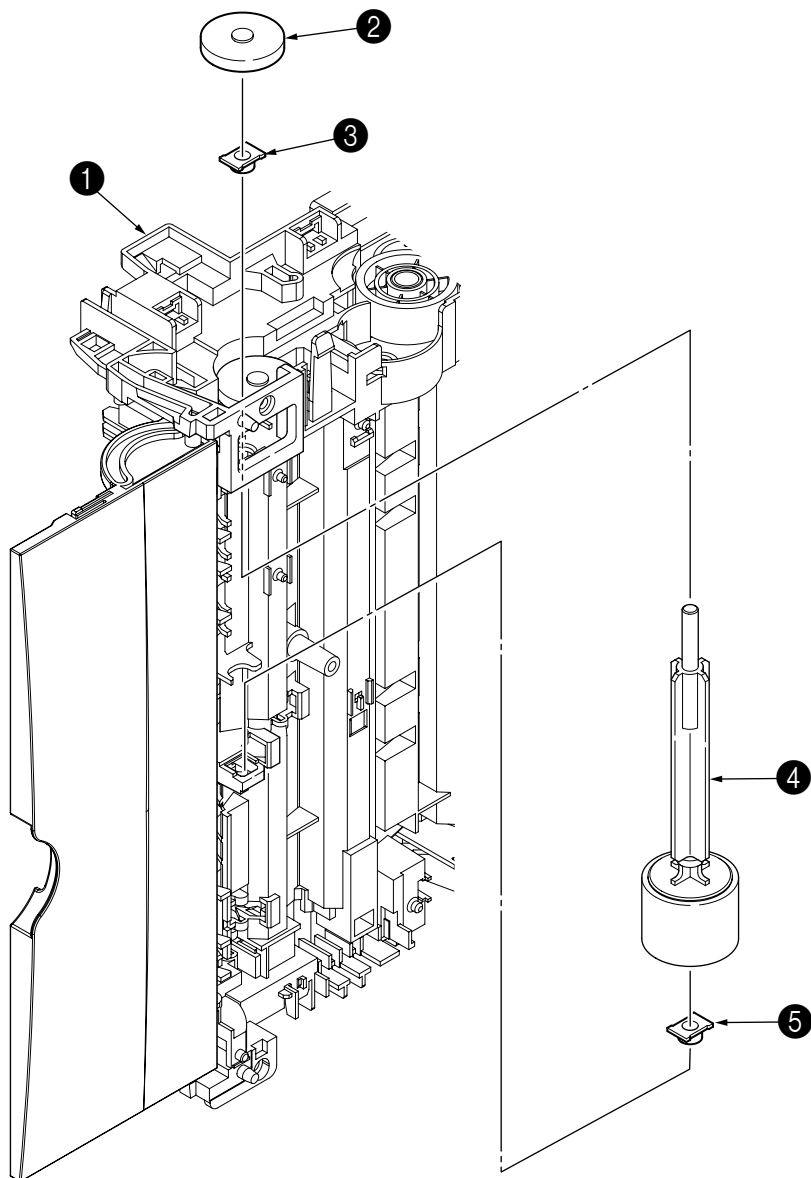
2.3.9 Motor Assy

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.7).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Stand the lower base unit on its side as shown, and unlock two latches, then remove the motor assy ①.
- (6) Remove two screws ② and remove the bracket-Motor-Sub ③ from the Motor bracket.



2.3.10 Hopping Roller Shaft Assy

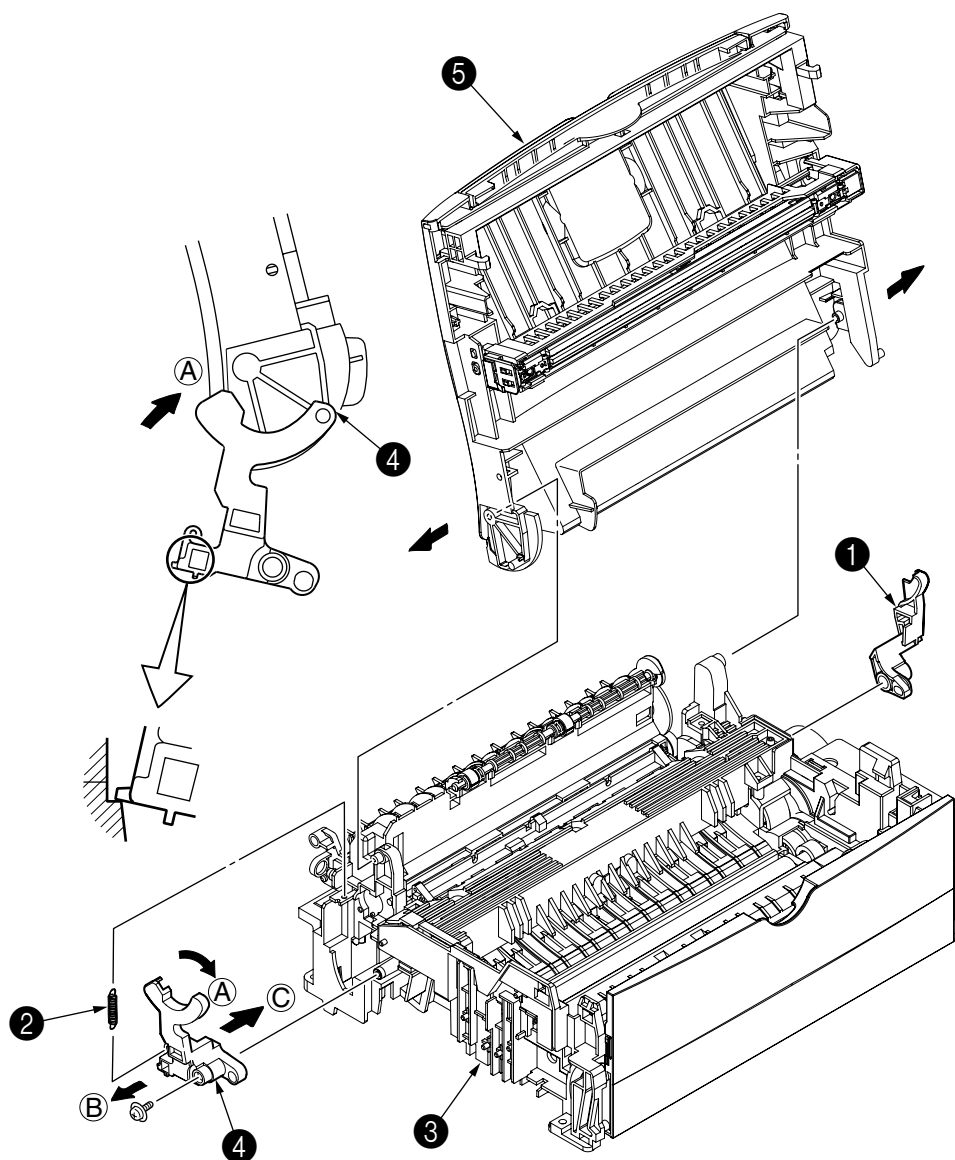
- (1) Remove the upper cover (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.7).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Remove the motor assy (see 2.3.9).
- (6) With the lower base unit ❶ standing on its side, remove the one-way clutch gear ❷ and the bearing (A) ❸.
- (7) Remove the hopping roller shaft assy ❹ (the bearing (B) ❺ comes off, so be careful not to lose it).



2.3.11 Stacker Cover Assy

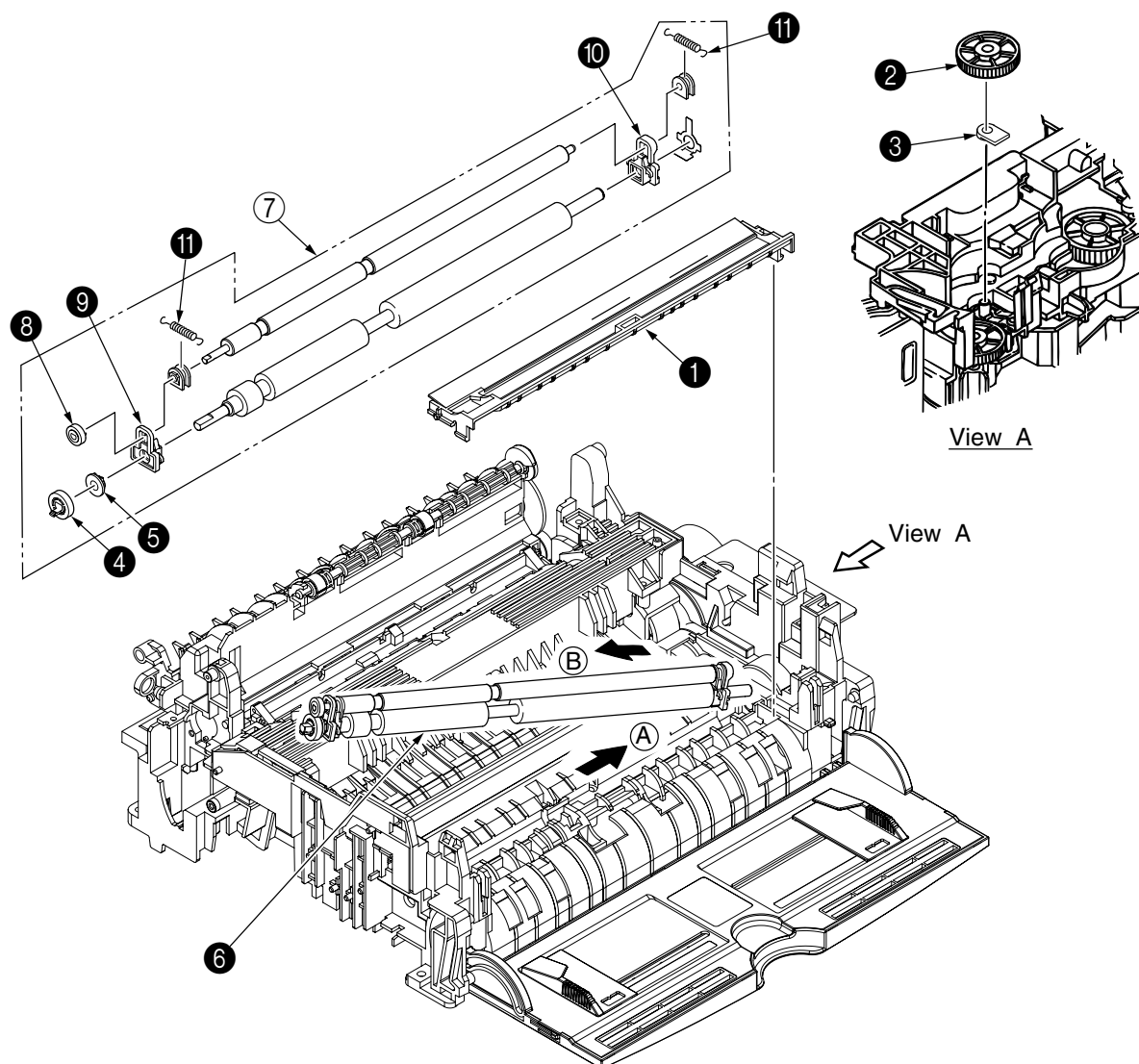
- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.7).
- (4) Remove the motor assy (see 2.3.9).
- (5) Remove the reset lever R ❶.
- (6) Remove one screw, detach the reset spring ❷ from the lower base unit ❸, turn the reset lever L ❹ in the direction of arrow ❸ until it stops, and remove it in the direction of arrow ❹.
- (7) Unlock two latches of the lower base unit ❸, then remove the stacker cover assy ❺.

Note : When reinstalling the reset lever L ❹, fit it onto the guide of the lower base unit ❸, turn it in the direction of arrow ❸ while pressing down the shaft of back up roller, and engage the reset lever L ❹.



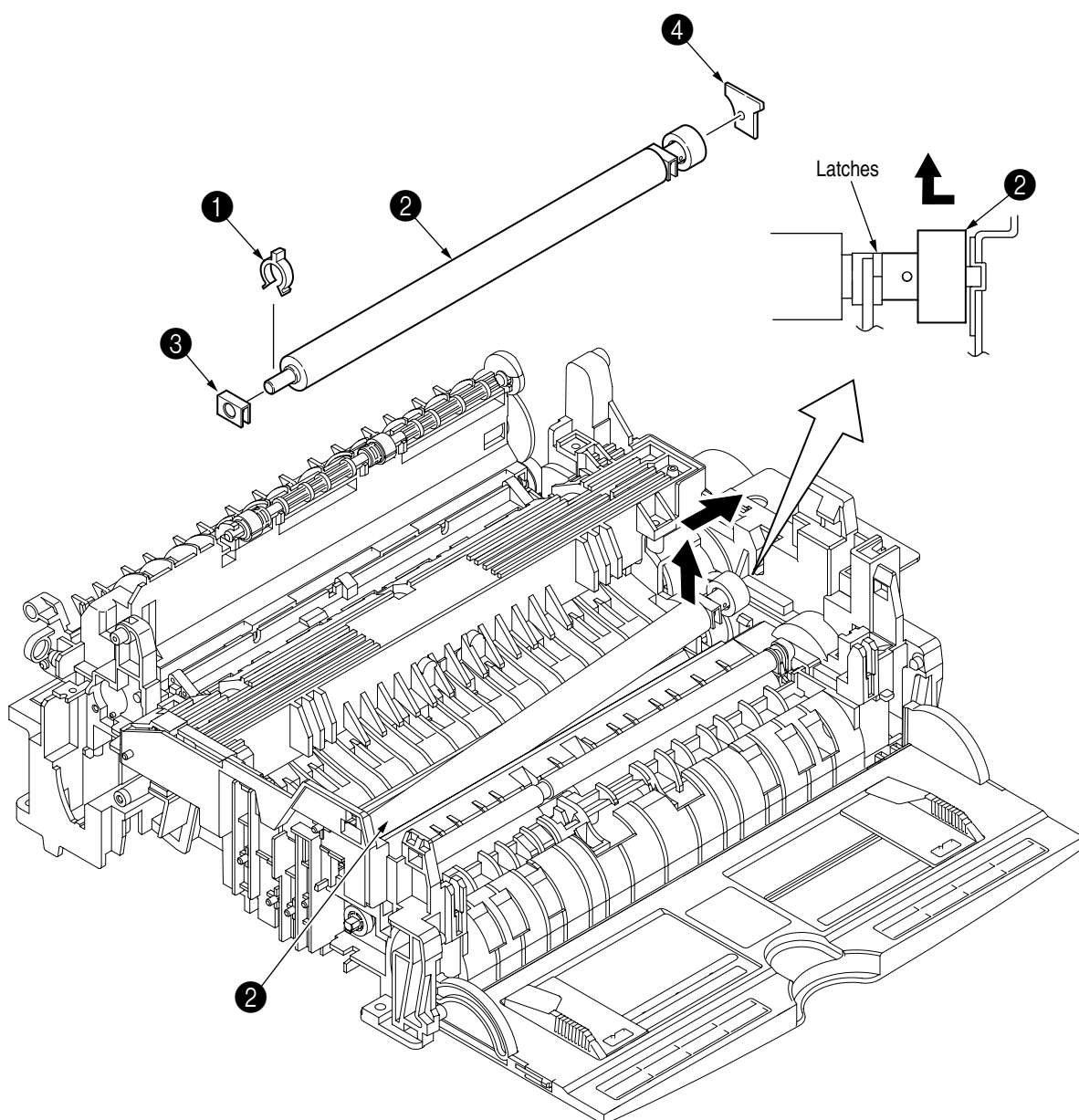
2.3.12 Registration Roller

- (1) Remove the upper cover (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.7).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Remove the motor assy (see 2.3.9).
- (6) Unlock the latch at the left side of the paper guide (R) ❶ and remove the paper guide (R) ❶.
- (7) With the lower base unit standing on its side, remove the one-way clutch gear ❷ and the bearing ❸.
- (8) Remove the Registration Gear by unlocking the latch of the Gear ❹.
- (9) Remove the Registration Bearing L ❺.
- (10) Press the registration roller ❻ in the direction of arrow A and lift up the left side of it, then remove the registration roller Assy ❼.
- (11) Pull out the registration roller Assy ❼ in the direction of arrow B.
- (12) Remove the pressure roller Assy gear ❽ by unlocking the latch of the gear ❽.
- (13) Remove the bearing-Registration L ❾ and bearing Registration R ❿.
- (14) Remove the Spring ⓫ from the bearing ❾, ❿.



2.3.13 Roller Transfer Assy

- (1) With the power switch turned off, unplug the AC cord from the outlet.
- (2) Open the stacker cover.
- (4) Remove the spacer ①.
- (4) Release the roller transfer assy ② by unlocking two latches of the bearing TR (never apply excessive force when unlocking the latch) and slide the roller transfer assy left to remove the gear from the bracket.
- (5) Lift the right side of the roller transfer assy ②, and shift it to the right side, then pull it out from the main unit (at this time, the bearings ③ of the left side and holder-TR ④ of the right side of the roller transfer assy ② will also come off).

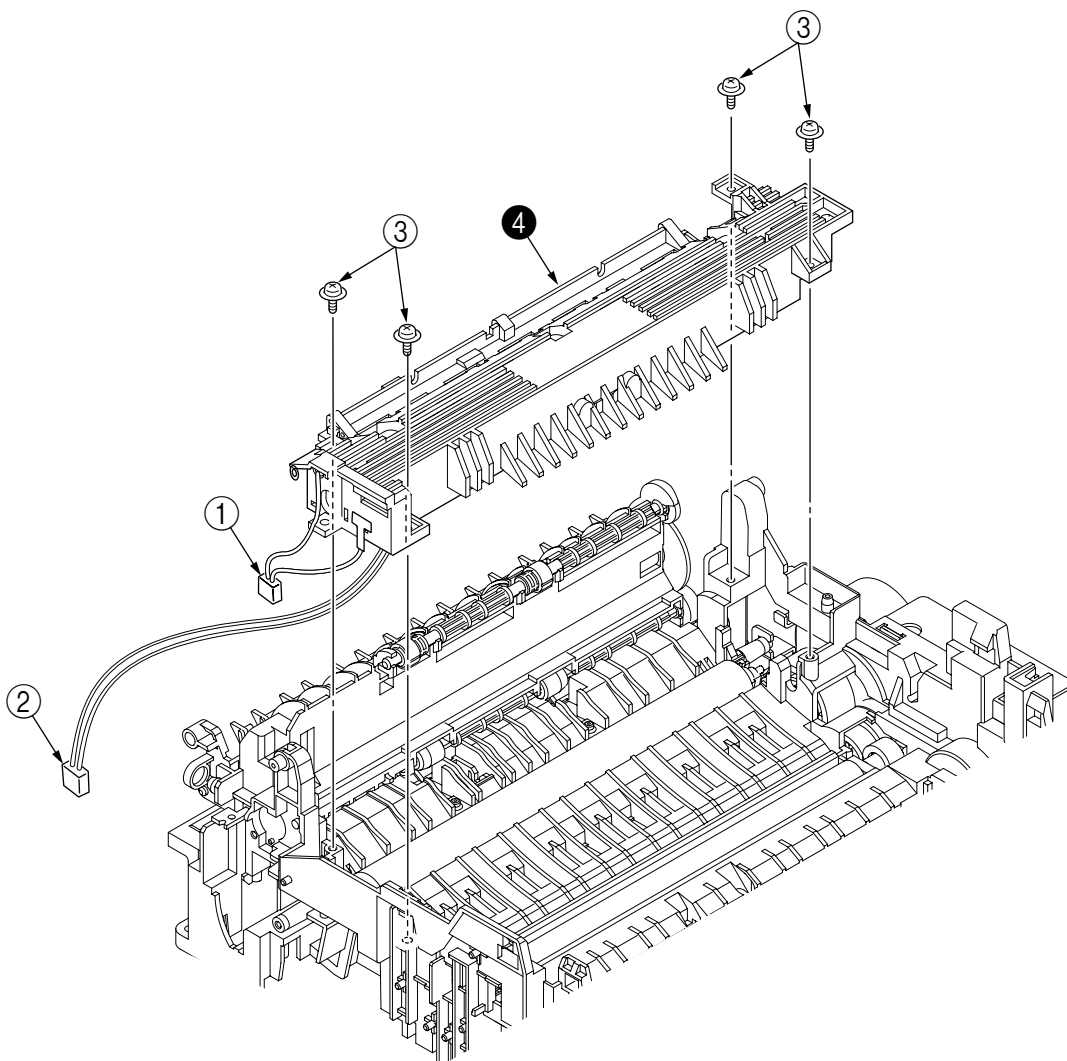


2.3.14 Fusing Unit

- (1) Remove the upper cover (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.7).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Remove the stacker cover assy (see 2.3.11).
- (6) Remove the connecting cable ① of the heater and connecting cable ② of the thermistor from the hooks of the lower base.
- (7) Remove four screws ③, lift and remove the fusing unit ④.

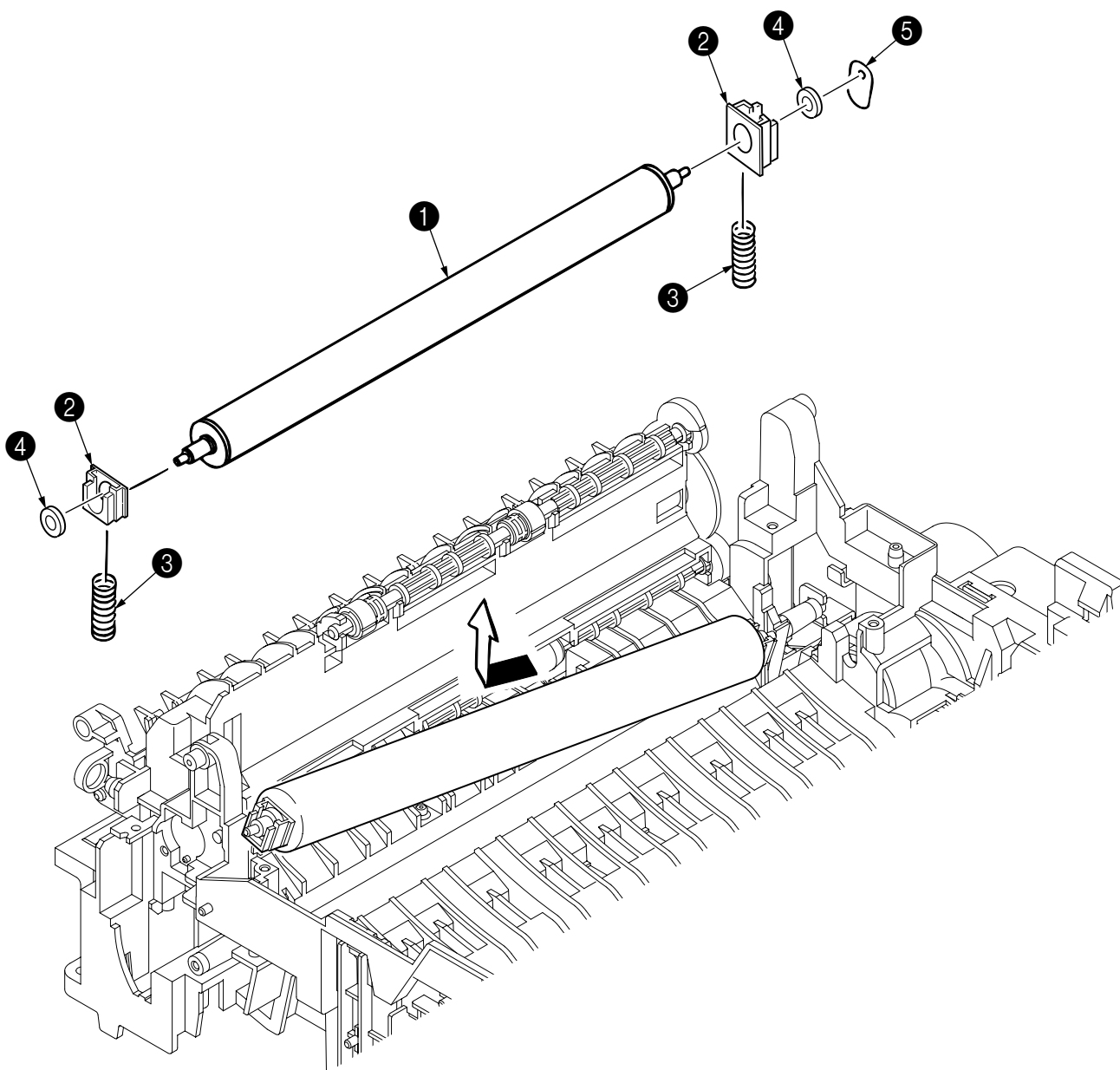
Caution: Fusing unit may be hot. Use care when handling.

- Notes :**
1. When reinstalling or removing the fusing unit, tighten or loosen the screws while holding the fusing unit assy ④ down with your hand (it is being pushed up by back up roller).
 2. When reinstalling the screws ③, be sure to direct the screws into preexisting thread and avoid damaging the threads.
 3. Do not apply excessive torque when tightening the screws ③.



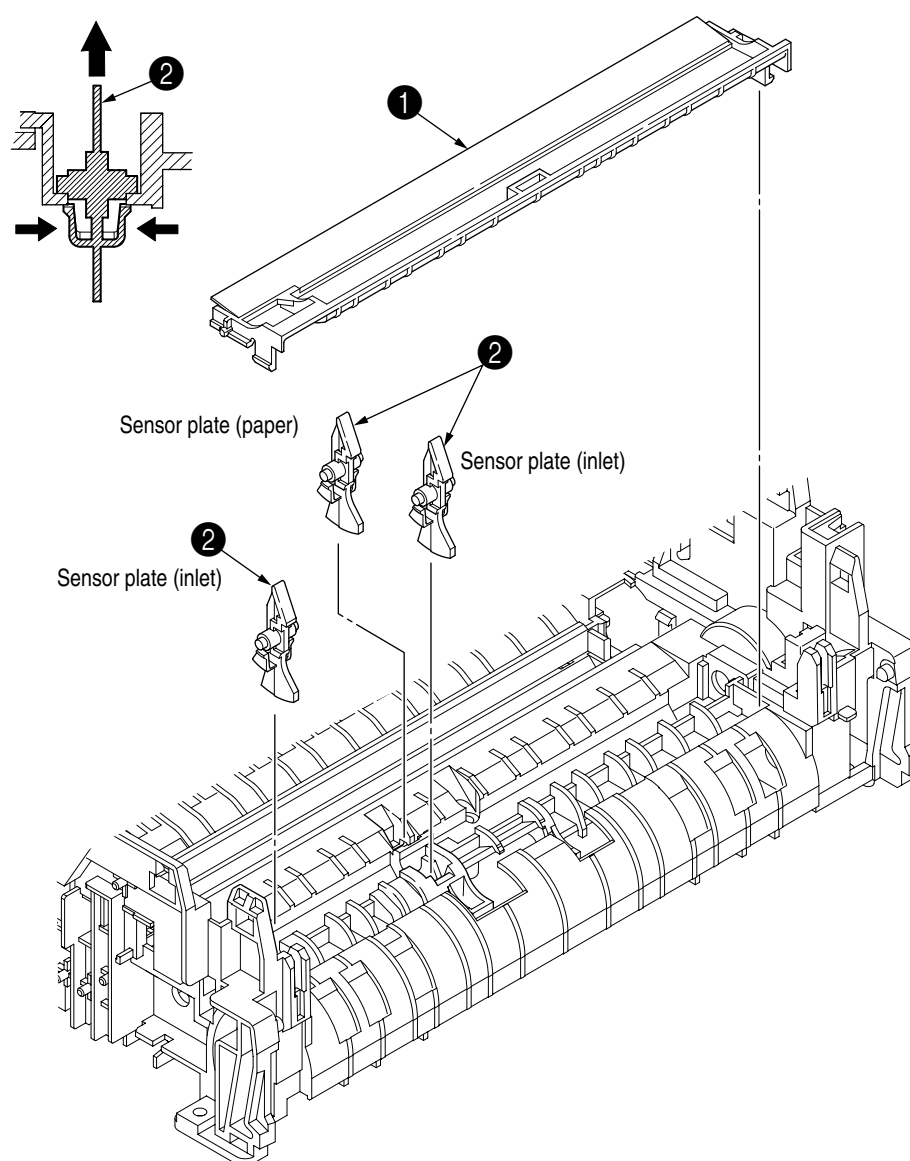
2.3.15 Back-up Roller

- (1) Remove the fusing unit assy (see 2.3.14).
- (2) Lift the left side of the back-up roller ①, and pull it out to the left side (at this time, two bearing Holders (back-up) ② and the bias springs (back-up) ③ and the two ball-bearings ④, washer C ⑤ will also come off).



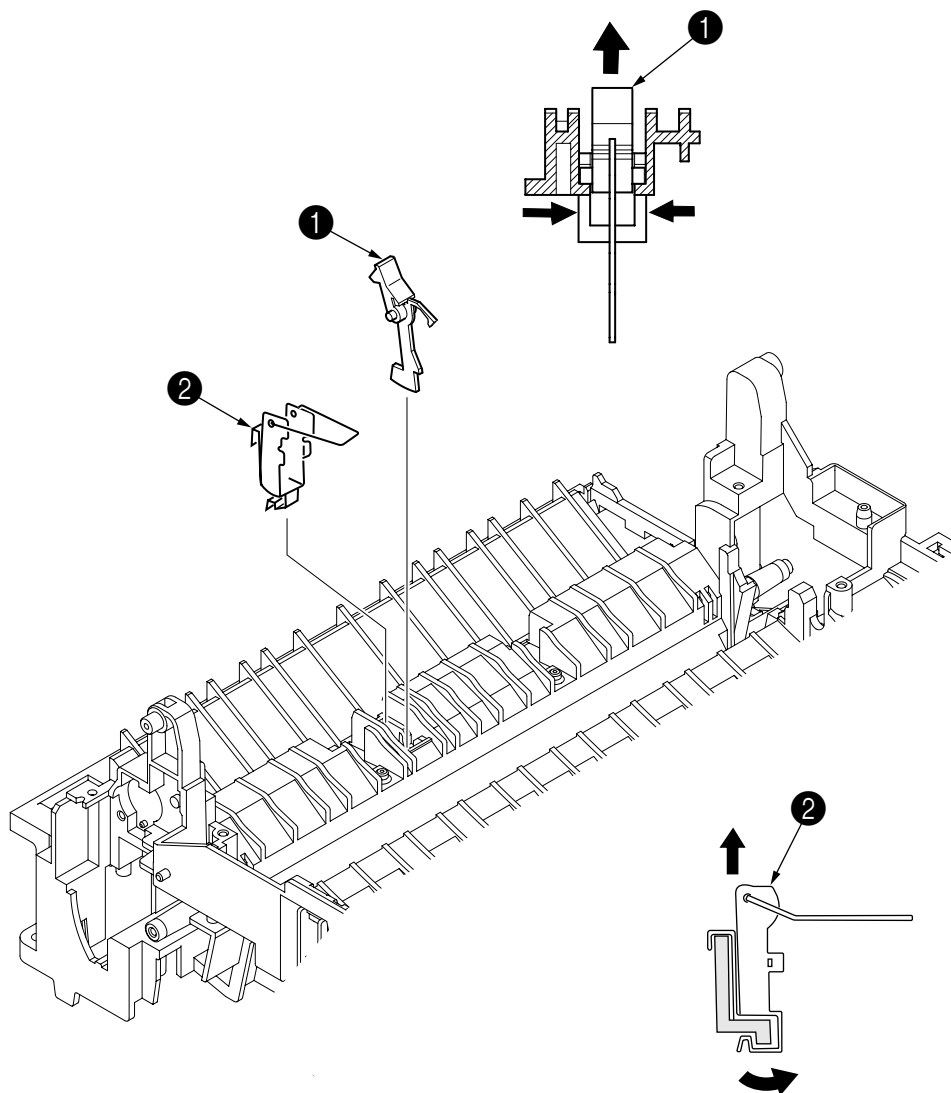
2.3.16 Sensor Plate (Inlet)

- (1) Remove the upper cover (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.7).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Unlock the latch at the left side of the paper guide (R) ❶ and remove the paper guide (R) ❶.
- (6) Press the clamps of three sensor plates (inlet and paper) ❷, and remove them by pressing them upward from the bottom.



2.3.17 Sensor Plate (Outlet), Sensor Wire Assy

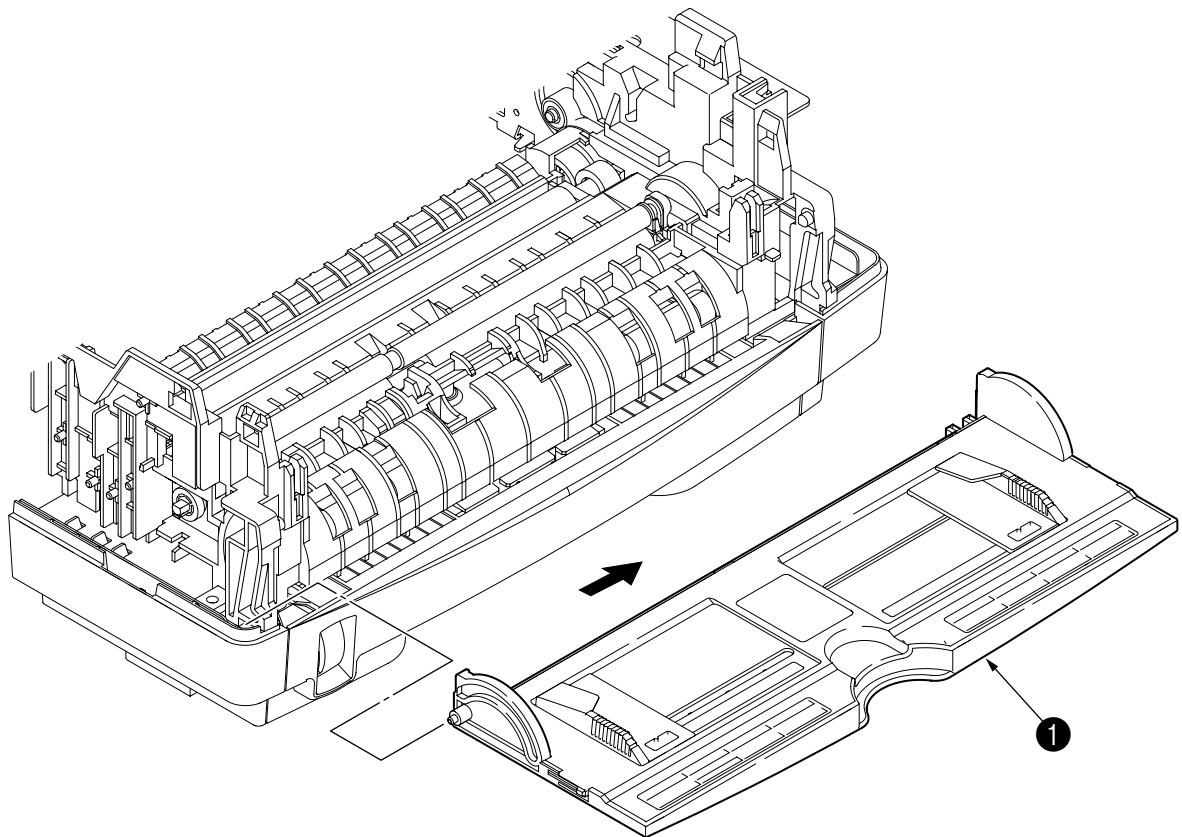
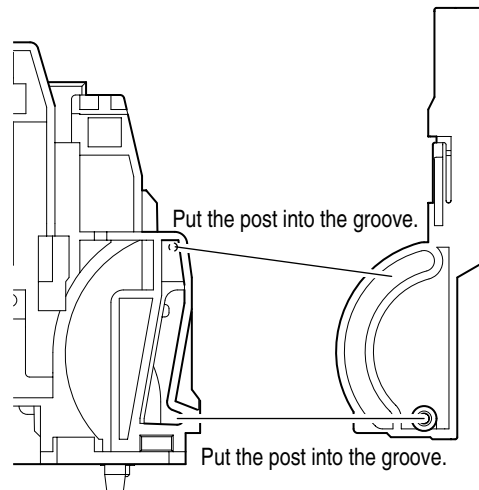
- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the eject roller assy (see 2.3.8).
- (4) Remove the face up stacker assy (see 2.3.7).
- (5) Remove the lower base unit (see 2.3.4).
- (6) Remove the fusing unit assy (see 2.3.14).
- (7) Press the clamps of the sensor plate (outlet) ①, and remove the sensor plate by pushing it up.
- (8) Turn the clamps of the sensor wire assy ② remove the sensor wire assy from the lower base unit.



2.3.18 Manual Feed Guide Assy

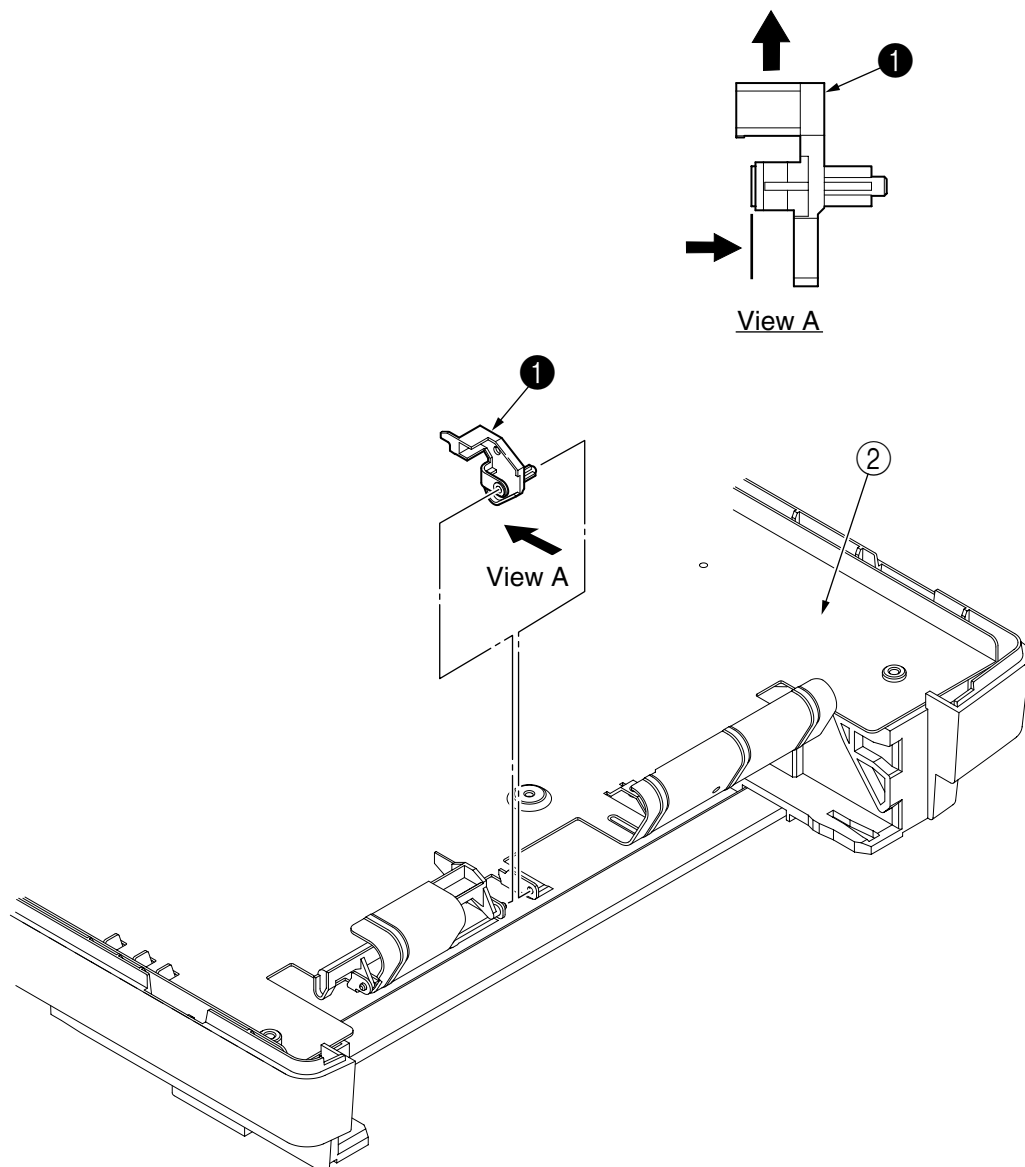
- (1) Remove the upper cover assy (see 2.3.1).
- (2) Open the manual feed guide assy ❶, and release the engagement on both sides with the main unit by carefully bending the manual feed guide assy ❶.

Note : When remounting, verify the proper the engagements as shown in the diagram.



2.3.19 Sensor Plate (Paper Supply)

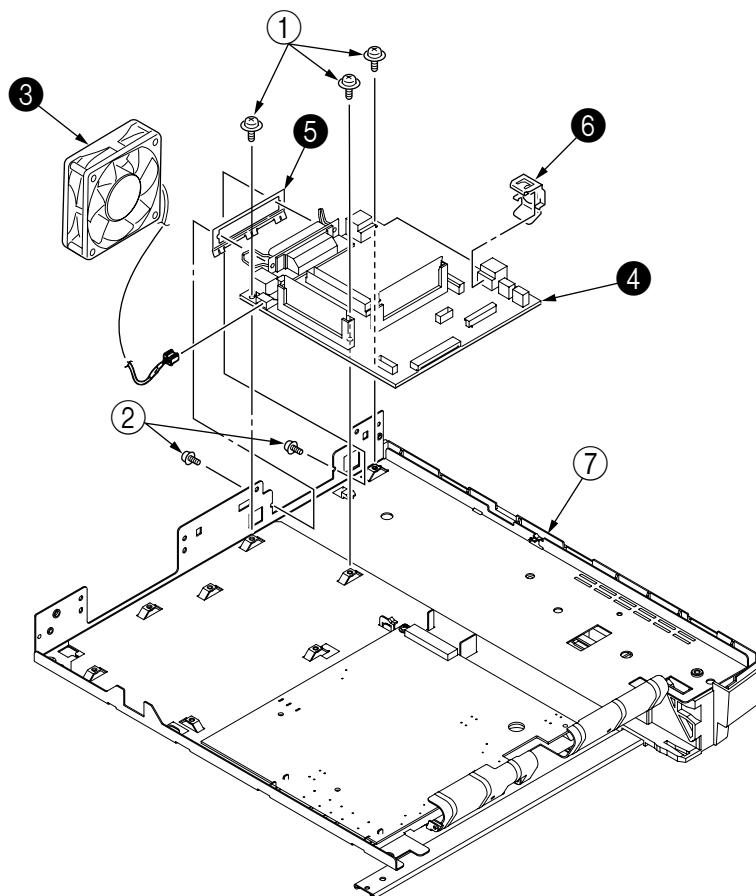
- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.7).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Press the clamps of the sensor plate (paper supply) ❶ to unlock the latch, and remove it from the base plate ❷.



2.3.20 GRG-PCB/GRR-7PCB

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.7).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Remove three screws ① and two screws ②.
- (6) Remove the connector FAN, and disconnect the fan motor ③.
- (7) Remove the three connectors PW-1, PW-2 and HVIF.
- (8) Remove the GRG-PCB or GRR-7PCB ④ and plate earth (A) ⑤ and plate earth (Env) ⑥.

Note : When reinstalling the GRG-PCB or GRR-7PCB ④ onto the base plate ⑦, insert the edge of the GRG-PCB or GRR-7PCB ④ in two slots of the base plate ⑦.



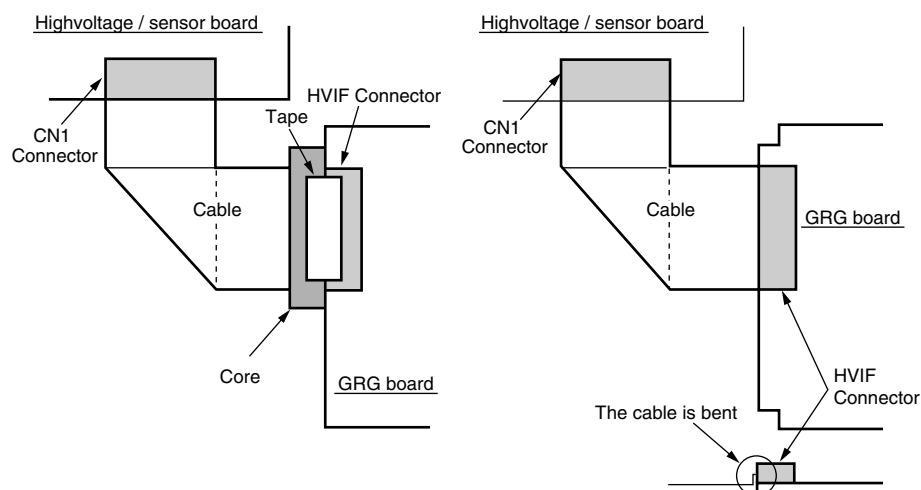
An attention matter in (GRG-PCB or GRR-7PCB) exchange.

1. The spare part of Main Control Board is different in part No. by version of F/W.
In PCB exchange, please change it for higher or equal version F/W than a former PCB.

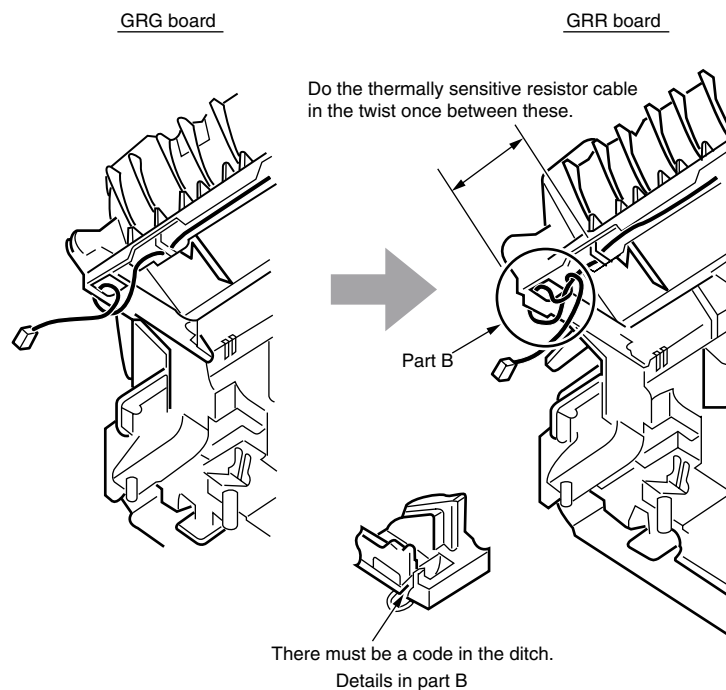
B4200

Spare part No. of Main Control Board	Board Name	CU Version	ECO No.
42263804	GRG	A1.17	-
42263809	GRG	A1.54	ECO-B4200-003
42263812	GRG	A1.56	ECO-B4200-004
42263815	GRG	A4.06	ECO-B4200-009
42263823	GRG	A5.04	ECO-B4200-031
43006724	GRR-7	A6.10	ECO-B4200-044

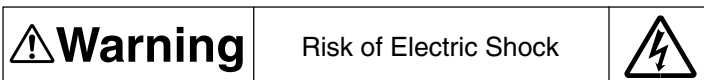
2. Remove the core applied to cable that connects high-voltage / sensor board with main control board when you change the board from GRG to GRR-7.



3. Change the route of the thermally sensitive resistor cable as shown in figure to that the position of the connector is different when you change the board from GRG to GRR-7.



2.3.21 Power Supply Board and High Voltage/Sensor Unit



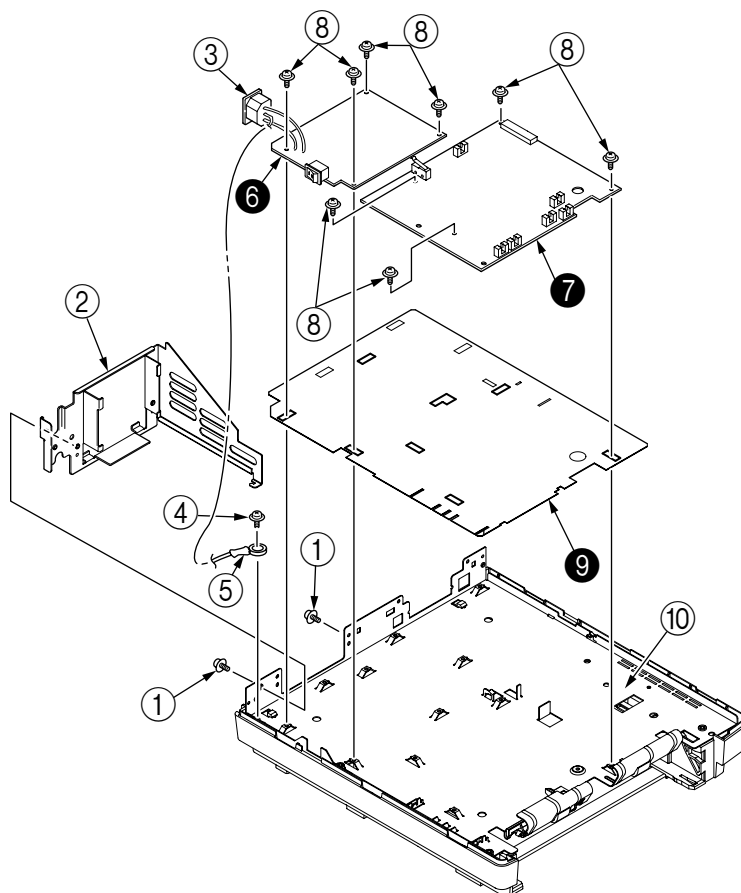
There is a risk of electric shock during replacement of the low voltage power supply.

Use insulating gloves or avoid direct contact with any conducting part of the power supply, and caution should be exercised during replacement.

The capacitor may take one minute to complete discharge after the AC cord is unplugged. Also, there is a possibility that the capacitor doesn't discharge because of a breakage of the PCB, etc., so remember the possibility of electric shock to avoid electric shock.

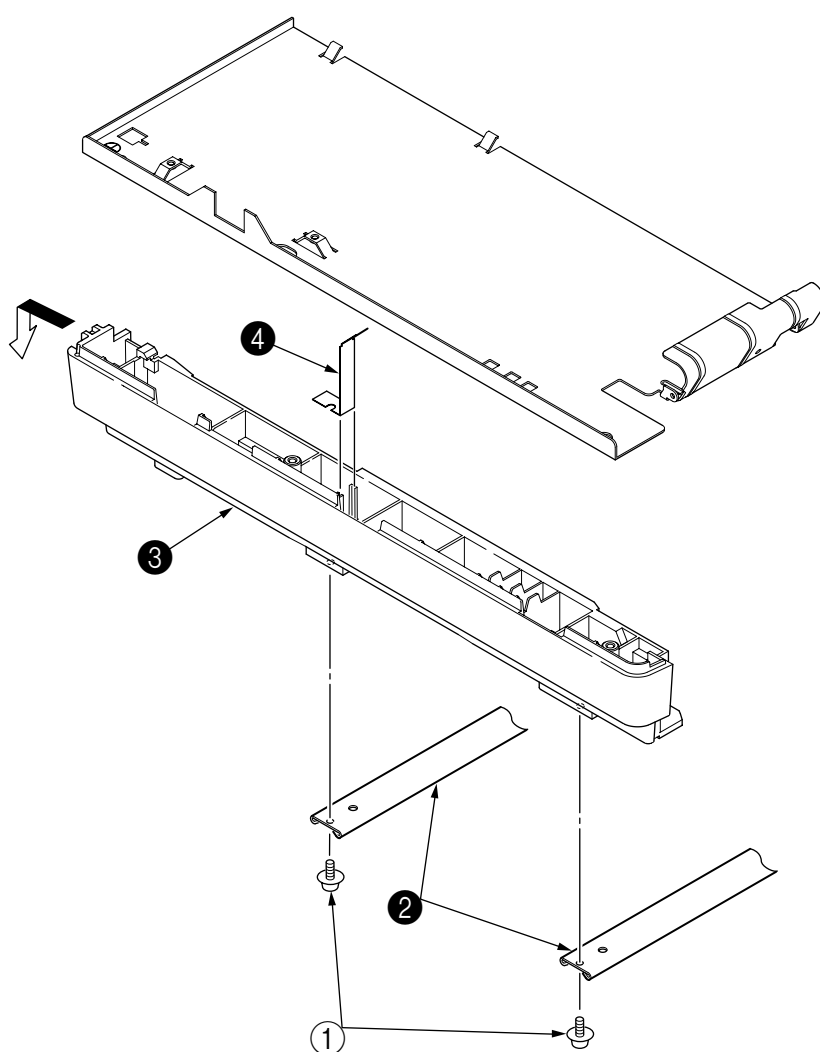
- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the lower base unit (see 2.3.4).
- (3) Remove two screws ① and the guide plate ②.
- (4) Remove the AC inlet ③ from the guide plate ②.
- (5) Remove the screw ④ and remove the grounding (earth) wire ⑤.
- (6) Remove the connectors CN2 from power supply board ⑥ and CN1 from high voltage/sensor unit ⑦.
- (7) Remove eight screws ⑧, and remove the power supply board ⑥ and high voltage/sensor unit ⑦.
- (8) Remove the Insulation plate ⑨ from the base plate ⑩.

- Notes :**
1. Be careful about the sensor (paper supply) when reinstalling the lower base.
 2. Make sure that no excessive force is applied to the power supply switch.
 3. When installing the power supply/sensor onto the base plate, be careful not to bend the base plate (it is desirable to place a block underneath it to prevent bending).



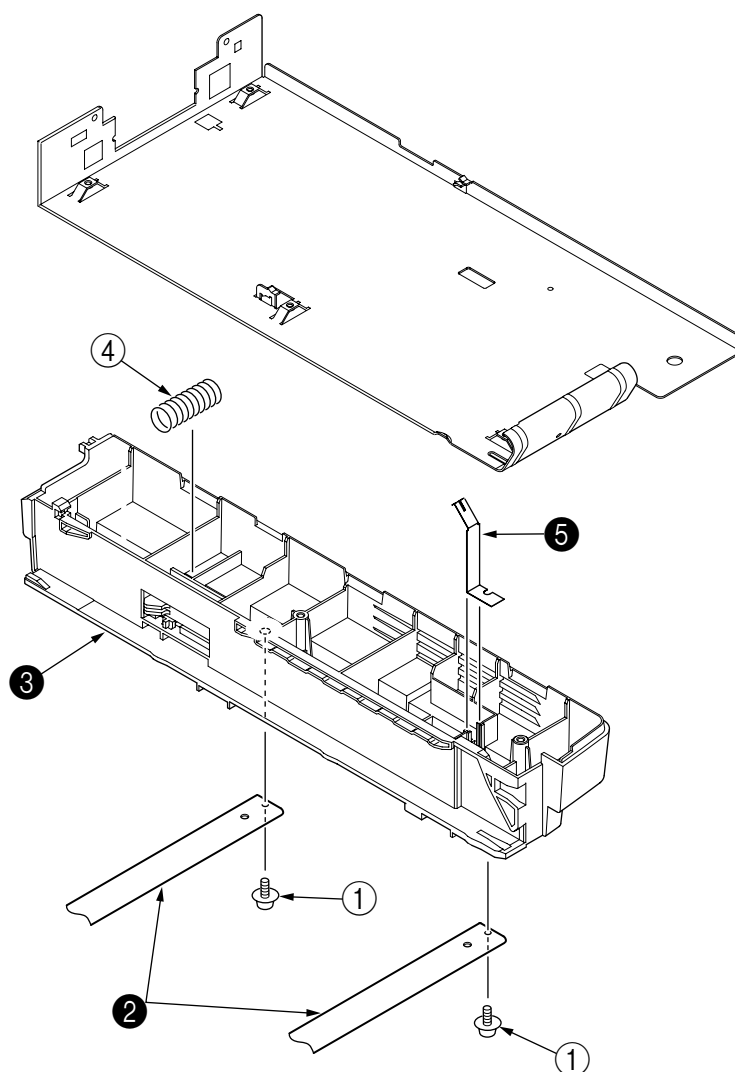
2.3.22 Cassette Guide L Assy

- (1) Remove the paper cassette.
- (2) Remove the upper cover assy (see 2.3.1).
- (3) Remove the lower base unit (see 2.3.4).
- (4) Remove two screws ①, and remove the beam plates ②.
- (5) Remove the cassette guide L Assy ③ by shifting it in the direction of the arrow as shown below.
- (6) Remove the earth plate ④.



2.3.23 Cassette Guide R Assy

- (1) Remove the paper cassette.
- (2) Remove the upper cover assy (see 2.3.1).
- (3) Remove the lower base unit (see 2.3.4).
- (4) Remove two screws ①, and remove the beam plates ②.
- (5) Remove the cassette guide R Assy ③ by shifting it in the direction of arrow.
- (6) Remove the earth plate ④ and the cassette lock spring ⑤.



3. ADJUSTMENT

This chapter explains adjustment necessary when a part is replaced.

This adjustment is made by changing the parameter values set in EEPROM on the main control board. The status monitor or maintenance utility can be used to change these values.

Only servicemen and maintenance personnel can use the maintenance utility. This utility cannot be made public for printer end users.

3.1 Adjustment Types and Functions

3.1.1 Status Monitor

(TBD)

3.1.2 Engine Maintenance Utility

(TBD)

3.2 Adjustment When Replacing a Part

Adjustment is necessary when replacing any of the following parts.

Part Replaced	Adjustment
Image Drum Cartridge	Reset the image drum counter (refer to User's manual).
Main Control Board	EEPROM data Upload / Download

3.2.1 Uploading/Downloading EEPROM data

When the controller printed circuit board is replaced, the contents of the old EEPROM shall be copied to the new EEPROM on the new board to preserve customer settings. For the purpose, use the EEPROM operation on the Option of the Maintenance Utility. To copy follow the steps below.

- (1) Be sure to confirm that the printer and the PC are connected with a centronics I/F cable. Then execute the Maintenance Utility.
Note: Printer driver shall be deinstalled.
- (2) Select the Option on the Maintenance Utility.
- (3) Click the "UPLOAD EEPROM" button on the "EEPROM Operations".
- (4) The contents of the EEPROM data is displayed on the "DIALOG" of the Maintenance Utility. The contents of the old EEPROM is now copied into the memory of the PC.
- (5) Replace the controller P.C.B. with a new one while it displays the above "DIALOG".
- (6) After the replacement, click "Downloaded EEPROM" on the "EEPROM Operations". EEPROM upload has been completed.

In case of troubles such as centronics I/F failure, etc. EEPROM data may not be uploaded properly. In such case, it is necessary to adjust the following settings manually after the replacement using the Maintenance Utility.

- Factory setting (ODA/OEL/AOS)

The maintenance utility is designed to be used only by field engineer and it should not be released to the end-users.

4. PERIODICAL MAINTENANCE

4.1 Periodical Replacement Parts

The parts are to be replaced periodically as specified below:

Part name	Condition for replacement	Cleaning	Remarks
• Toner cartridge 2.5K (Type 9)	About 2,500 sheets of paper have been printed.	• LED head	Consumables
• Image drum cartridge (Type 9)	About 25,000 sheets of paper have been printed. See 1.4. (14)		Consumables

4.2 Cleaning

Remove any toner or dust accumulated inside the printer. Clean in and around the printer with a piece of cloth when necessary. Use the handy cleaner (service tool) to clean inside the printer.

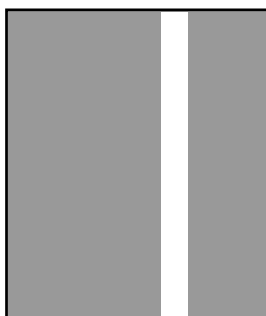
Note: Do not touch the image drum, LED lens array, or LED head connector block.

4.2.1 Cleaning of LED Lens Array

Clean the LED lens array or replace the toner cartridge when white lines or stripes (void, light printing) are generated vertically down the page, as shown below.

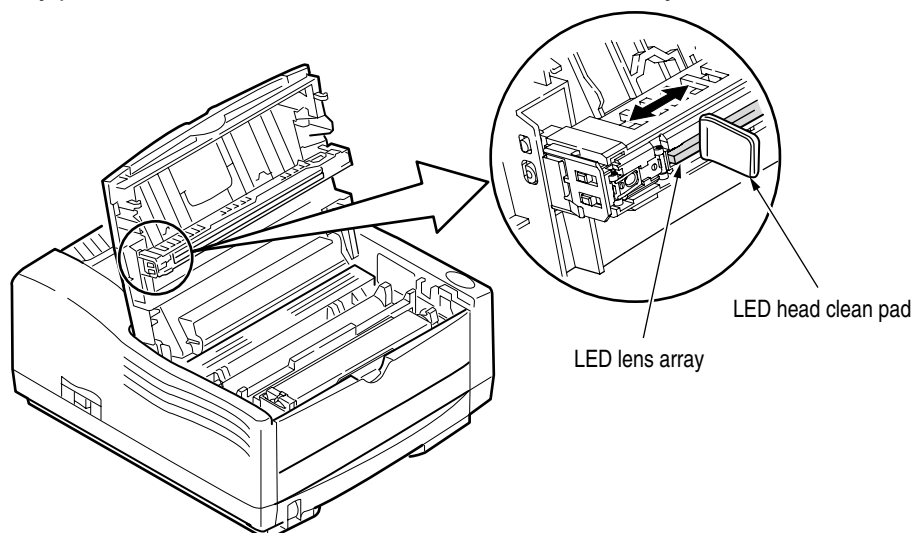
Note: The LED lens array must be cleaned with an LED head cleaner included in the replacement toner kit.

White lines or stripes
(void, light printing)



- (1) Set the LED head cleaner to the LED lens array as shown in the figure, then slide the cleaner back and forth horizontally several times to clean the head.

Note: Gently press the LED head cleaner onto the LED lens array.



- (2) Throw the cleaner pad away.

4.2.2 Cleaning Page Function

There is a charge roller cleaning function with this printer, which can be executed by the user.

- (1) Press the control switch to take the printer off line.
- (2) Open the manual feed tray and insert a sheet of A4 plain paper between the paper guides.
- (3) Press and hold down the control switch for at least five seconds.
- (4) The printer grips the paper and prints a cleaning page.
- (5) Return the printer on line by pressing the control switch.
- (6) If subsequent printing appears faded or uneven, try replacing the toner cartridge.

5. TROUBLESHOOTING PROCEDURES

5.1 Troubleshooting Tips

- (1) Check the basic check points written in the user's manual.
- (2) Gather detailed failure information as much as possible from the customer.
- (3) Check the printer under the condition close to that under which the failure occurred.

5.2 Check Points Before Correcting Image Problems

- (1) Is the printer running in proper ambient conditions?
- (2) Are consumables (toner and EP unit) replaced correctly?
- (3) Are sheets of paper normal?
- (4) Is the EP unit set correctly?

5.3 Notes When Correcting Image Problems

- (1) Do not touch the surface of the OPC drum nor place foreign matter on it.
- (2) Do not expose the OPC drum to direct sunlight.
- (3) Do not touch the fuser because it heats up during operation.
- (4) Do not expose the image drum to light for more than five minutes at room temperature.

5.4 Preparation Before Troubleshooting

(1) Message display

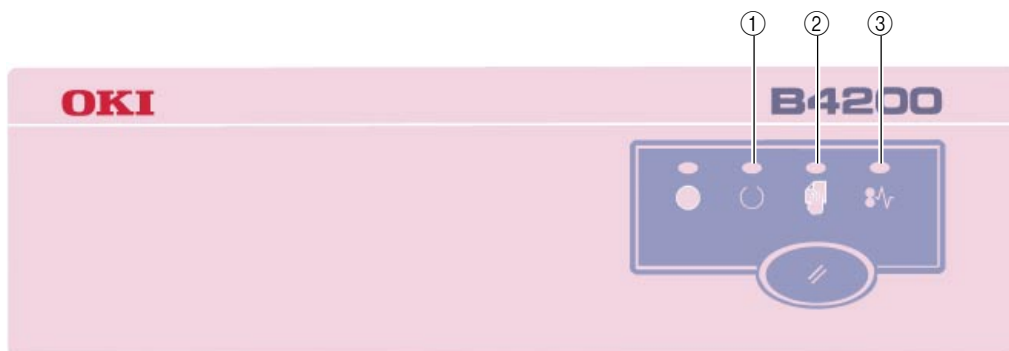
The failure status of printer is displayed on the status monitor of the PC.

Take proper action according to the message displayed on the status monitor.

(2) LED indicator

Printer is equipped with three LED. These LED indicates one of the following status:

For ODA





For OEL/INT






- ① Ready LED Indicator
- ② Manual Feed LED Indicator
- ③ Error LED Indicator

LED Functions(1/2)

Status	 Ready (green)	 Manual Feed (amber)	 Error (amber)	Remark
Online(Ready)	ON	OFF	Undefined	
Offline	OFF	OFF	Undefined	
Data Arrive	Flash 2	OFF	Undefined	
Data Processing	Flash 2	OFF	Undefined	
Data Exist	Flash 1	OFF	Undefined	
Printing	Flash 2	OFF	Undefined	
Printing (copy)	Undefined	OFF	Undefined	
Canceling Job	Flash 1	OFF	Undefined	
Canceling Job	Flash 1	OFF	Undefined	
Warming Up	Flash 1	OFF	OFF	
Power Saving	Undefined	OFF	OFF	
Toner Low	Undefined	Undefined	Flash 1 or Flash 2	
Toner Empty	Undefined	OFF	Flash 2	
Toner Sensor Error	Undefined	Undefined	Flash 1	
Change Drum	Undefined	Undefined	Flash 3	
Print Demo	Flash 2	Undefined	Undefined	
Print Fonts	Flash 2	Undefined	Undefined	
Print Menu Map	Flash 2	Undefined	Undefined	
Print Cleaning	Flash 2	Undefined	Undefined	
Invalid data	Undefined	OFF	Flash 2	
tttt tray paper out (BACK GROUND)	Undefined	Undefined	Flash 1	
Tray2 cover open	Undefined	Undefined	Flash 1	
File System Error (File System full)	Undefined	Undefined	Flash 1	
File System Error (Write Protect)	Undefined	Undefined	Flash 1	
File System Error (Operation failure)	Undefined	Undefined	Flash 1	
Manual Paper Request	Undefined	Flash 2	Undefined	
tttt Tray mmmm Paper Request	OFF	OFF	Flash 2	
Tray2 cover open	OFF	OFF	Flash 2	
tttt Tray mmmm Paper Media Mismatch	OFF	OFF	Flash 2	
tttt Tray mmmm Paper Size Mismatch	OFF	OFF	Flash 2	
RS232C Overflow Error	OFF	OFF	Flash 2	
RS232C Overrun Error	OFF	OFF	Flash 2	
RS232C Parity Error	OFF	OFF	Flash 2	
RS232C Framing Error	OFF	OFF	Flash 2	
Toner Empty	OFF	OFF	Flash 2	
Page Buffer Overflow	OFF	OFF	Flash 2	
Paper Size Error	OFF	OFF	Flash 2	

Flash 1: Slow blinking
Flash 2: Blinking
Flash 3: Fast blinking

LED Functions(2/2)

Status	 Ready (green)	 Manual Feed (amber)	 Error (amber)	Remark
Paper Induct Jam	OFF	OFF	Flash 2	
Paper Feed Jam	OFF	OFF	Flash 2	
Paper Exit Jam	OFF	OFF	Flash 2	
Change Drum	OFF	OFF	Flash 2	
I/D Not Installed	OFF	Undefined	Flash 2	
Cover Open	OFF	Undefined	Flash 2	
Restarting Printer	OFF	OFF	Flash 2	
Fatal Error	Flash 3	Flash 3	Flash 3	
During initializing	OFF	OFF	OFF	
Initializing EEPROM	OFF	OFF	OFF	
Checking RAM	OFF	OFF	OFF	
During initializing EEPROM	Flash 2 (3 times)	Flash 2 (3 times)	Flash 2 (3 times)	
Drum counter being reset	Flash 2 (2 times)	Flash 2 (2 times)	Flash 2 (2 times)	
Forced ROM start-up function Rising	Flash 2	Flash 2	Flash 2	
During initializing	ON and then OFF	ON and then OFF	ON and then OFF	

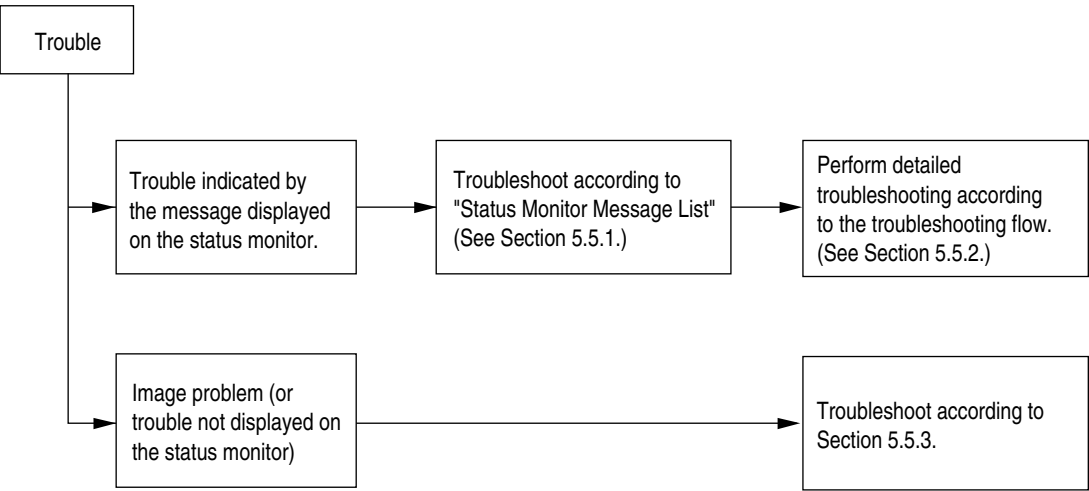
Flash 1: Slow blinking

Flash 2: Blinking

Flash 3: Fast blinking

5.5 Troubleshooting

If a trouble occurs in the printer, troubleshoot according to the following procedures:



5.5.1 Status Monitor Message List

Table 5-1 lists the statuses and troubles to be displayed on the status monitor in the message format.

Table 5-1

Category	Status Message	Code	Display Content	Remedy
Normal status	Warming Up	10003	Warming-up status	Normal operation
	Online (Ready)	10001	Online (ready) status	Normal operation
	Power Save Mode	10094	Power save status	Normal operation
	Toner Low	10006	The toner amount of the toner cartridge is small.	Normal operation
	Toner Sensor	10093	The toner sensor is faulty.	Replace the toner sensor.
	Change Drum	40093	Life of I/D drum	Change the I/D Unit and reset Drum counter see Section 3.1.1 (1)
	Manual Paper In	10097	The paper is in the manual feed mode.	Normal operation
	Printing In Progress	10098	Printing in progress X=0, Non Warning X=1, Toner Low X=2, 3 Change Drum	Normal operation
	Ejection In Progress	10099	Ejection in progress X=0, Non Warning X=1, Toner Low X=2, 3 Change Drum	Normal operation
	Manual Request Executive Letter Legal 14 Legal 13 A6 A5 A4 B5 Monarch COM-10 DL C5 COM-9	411xx	Request the paper to be set in the manual feed mode. The paper sizes are as follows: Executive, Letter, Legal 14, Legal 13, A4, A5, A6, B5, Monarch, DL, C5, COM-10, COM-9 xx: Paper size in the tray being selected	Set the requested paper in the manual feed mode.

Table 5-1 (Cont'd)

Category	Status Message	Code	Display Content	Remedy
Paper size error	Paper Size Error	30034	Paper of improper size was fed. 2.52" (64 mm) L 15.77" (400.56 mm)	Check the paper. Also check whether more than one sheet of paper were fed simultaneously. To release the error display, open the cover, then close it. If this error occurs frequently, see Section 5.5.2.3.
Paper jam	Paper Input Jam	40077	A paper jam occurred when sheets of paper were being supplied.	Check the paper. To release the error display, close the cover, then close it. If this error occurs frequently, see Section 5.5.2.2-1.
	Paper Feed Jam	40078	A paper jam occurred during paper feeding.	Open the cover, then remove the jammed paper. To release the error display, close the cover. If this error occurs frequently, see Section 5.5.2.2-2.
	Paper Exit Jam	40079	A paper jam occurred during paper ejection.	Open the cover, then remove the jammed paper. To release the error display, close the cover. If this error occurs frequently, see Section 5.5.2.2-3.
	ID Not Installed	40033		Installed I/D Unit
Cover open	Cover Open	40021	The upper cover is open.	To release the error display, close the cover. If this error occurs frequently, replace the power supply board.
Buffer overflow	Page Buffer Overflow	30097	The page buffer overflowed because there are a large number of print data.	To release the error display, press the reset button on the status motor of the printer driver. Install RAM or reduce the number of print data.
Device configuration error	Program ROM Check Error		An error occurred during program ROM check.	Replace program ROM or the main control board. (When replacing the main control board, also adjust EEPROM data.) (See Section 3.2.1)
	Resident RAM Check Error		An error occurred during resident RAM check.	Replace the main control board. (When replacing the main control board, also adjust EEPROM data.) (See Section 3.2.1)
	EEPROM Check Error		An error occurred during EEPROM check.	Replace the main control board. (When replacing the main control board, also adjust EEPROM data.) (See Section 3.2.1)

Table 5-1 (Cont'd)

Category	Status Message	Code	Display Content	Remedy
Device configuration error	Option RAM Check Error		An error occurred during option RAM check.	Check the connection of the Option RAM PC board. If the option RAM PC board is faulty, replace it.
	Fuser Error	40084	A heater timeout error occurred.	See Section 5.5.2 4.
	Thermister Open Check Error		The thermistor is open.	Replace the heater Assy.
	Thermister Short Check Error		A thermistor short occurred.	Replace the heater Assy.
	Watch Dog Timeout Error		A watchdog timeout occurred.	To release the error display, turn on the power supply again. Replace the main control board.
	Motor Timeout Error		A motor timeout occurred.	To release the error display, turn on the power supply again. Replace the main control board.

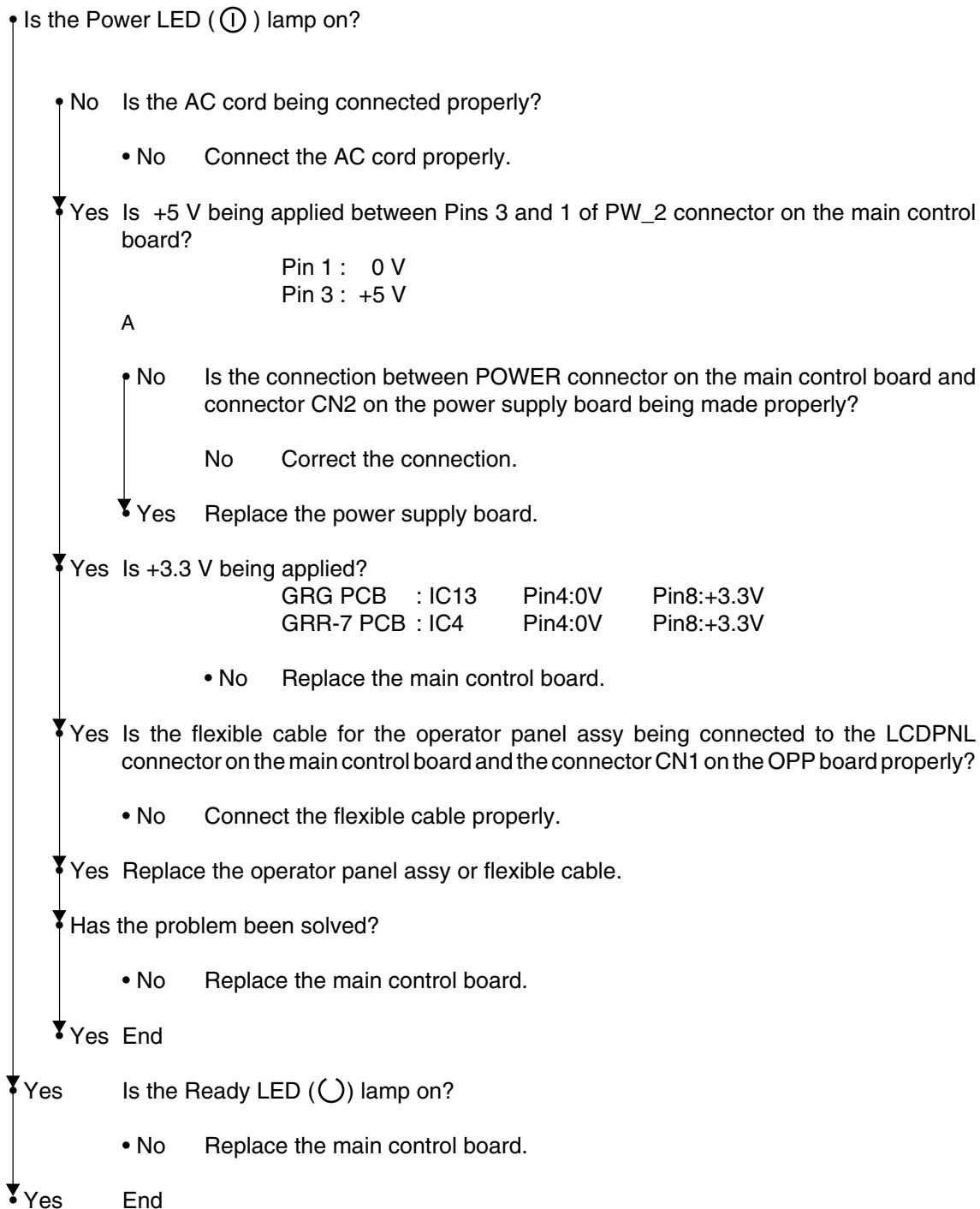
5.5.2 Status Message Troubleshooting

If the problems cannot be corrected by using the status message/problem list, follow the troubleshooting flowcharts given here to deal with them.

No.	Trouble	Flowchart number
1.	The printer does not work normally after the power is turned on.	①
2.	Jam alarm <ul style="list-style-type: none"> — Paper input jam — Paper feed jam — Paper exit jam 	②-1 ②-2 ②-3
3.	Paper size error	③
4.	Fusing unit error	④
5.	SSIO (Synchronous Serial Input/Output) error I/F timeout (no response) between the printer and an optional tray (High Capacity Second Paper Feeder, Power Envelope Feeder).	⑤
6.	Fan error	⑥

① The printer does not work normally after the power is turned on.

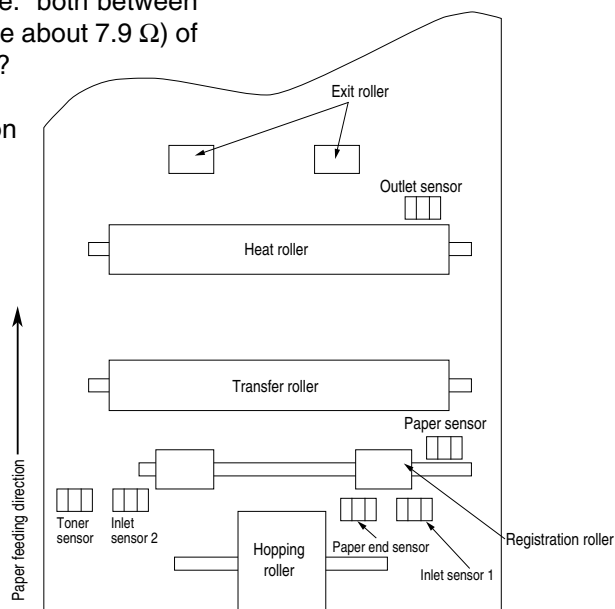
- Turn the power off, then back on.



[JAM error]

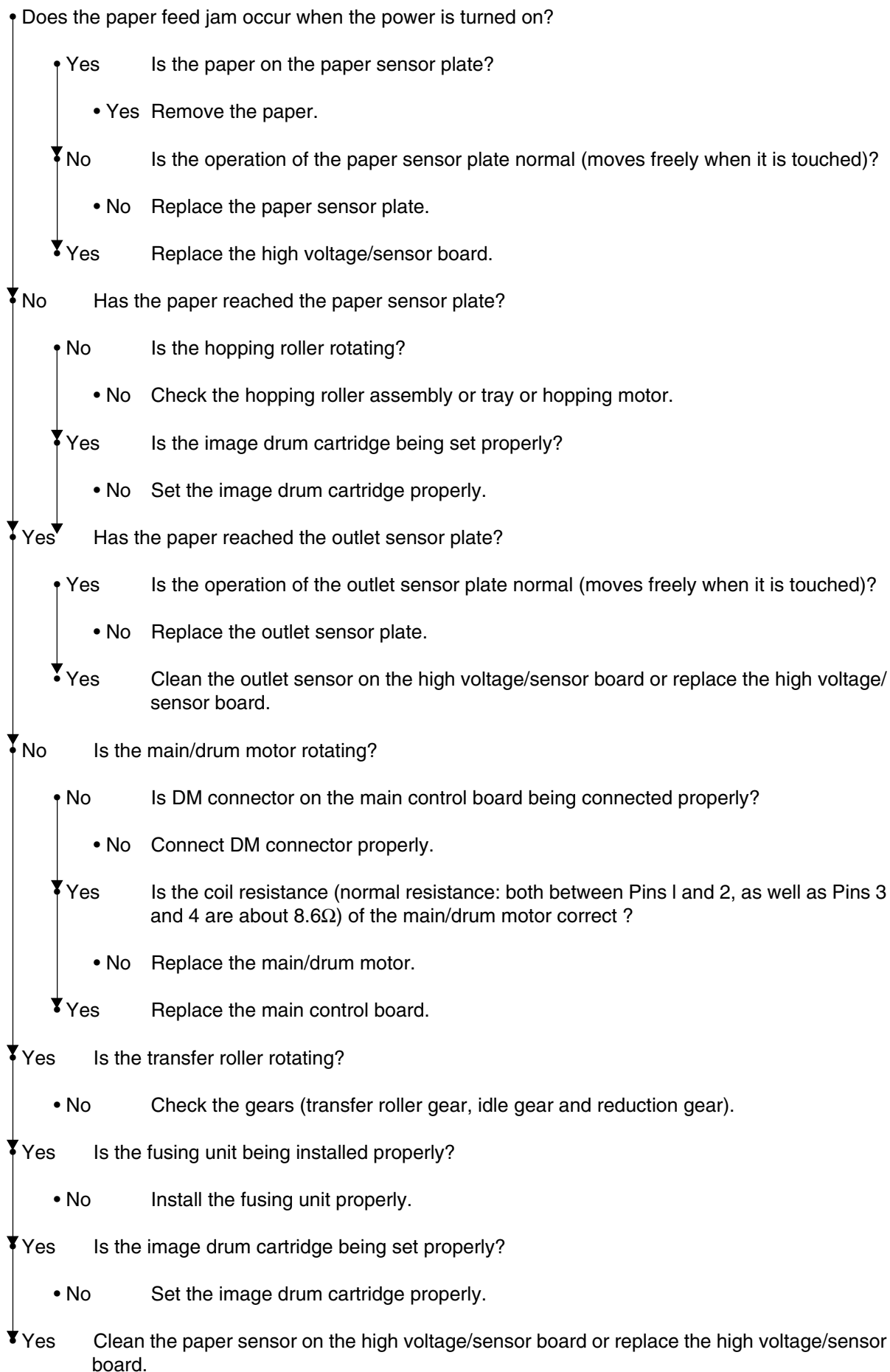
②-1 Paper input jam

- Does the JAM error occur when the power is turned on?
 - Yes Is the paper at the inlet sensor?
 - Yes Remove the paper.
 - No Is the operation of the inlet sensor plate normal (moves freely when it is touched)?
 - No Replace the inlet sensor plate.
 - Yes Clean the inlet sensor on the high voltage/sensor board, or replace the high voltage/sensor board.
- No Does the JAM alarm occur after paper feeding?
 - Yes Is the paper fed to the inlet sensor plate?
 - Yes Is the operation of the input sensor plate normal (moves freely when it is touched)?
 - No Replace the inlet sensor plate.
 - Yes Clean the inlet sensor on the high voltage/sensor board or replace the high voltage/sensor board.
 - No Replace the hopping roller rubber or paper cassette.
- No Is the hopping roller rotating?
 - Yes Set the paper tray properly.
- No Is the hopping / registration motor rotating?
 - Yes Replace the one-way clutch gear of the hopping roller assembly.
- No Is RM connector on the main control board being connected properly?
 - No Connect RM connector properly.
- Yes Is the coil resistance (normal resistance: both between Pins 1 and 2, as well as Pins 3 and 4 are about $7.9\ \Omega$) of the hopping / registration motor normal?
 - No Replace the hopping / registration motor.
- Yes Replace the main control board.



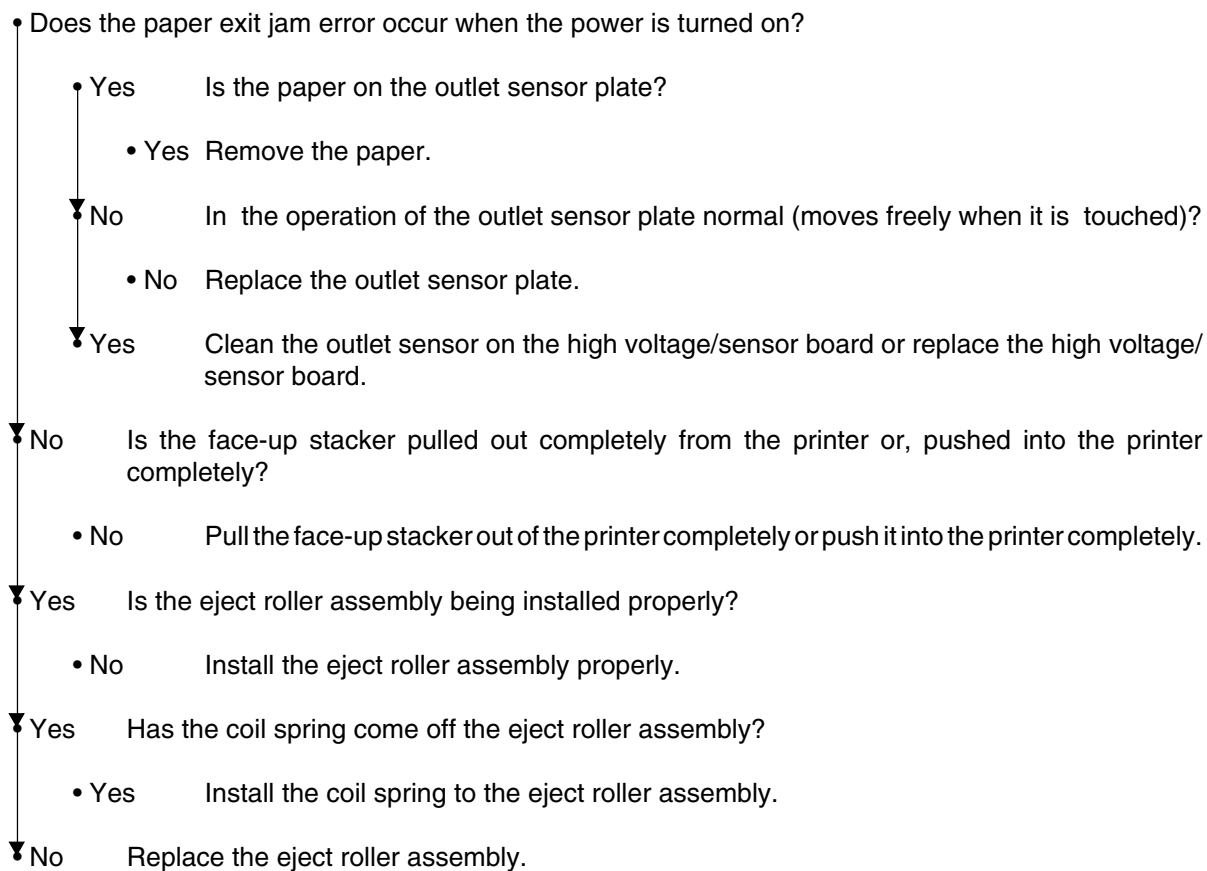
[JAM error]

②-2 Paper feed jam



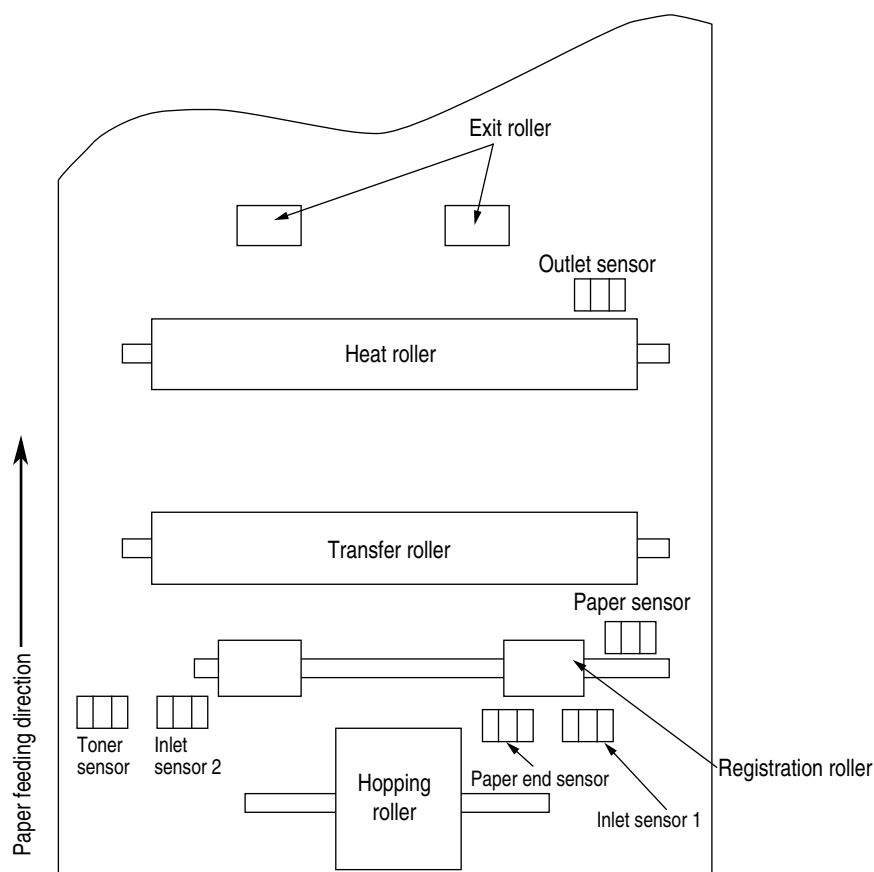
[JAM error]

②-3 Paper exit jam



③ Paper size error

- Is paper of the specified size being used?
 - No Use paper of the specified size.
- ▼ Yes Are inlet sensor plates 1 and 2 operating properly (moves freely when they are touched)?
 - No Replace the inlet sensor plate or clean the inlet sensor on the high voltage/sensor board.
- ▼ Yes Does the outlet sensor plate operate properly (moves freely when it is touched)?
 - No Replace the outlet sensor plate or clean the outlet sensor on the high voltage/sensor board.
- ▼ Yes Replace the high voltage/sensor board.



- ④ Fusing unit error Status Message :
- : Thermister Open Error
 - : Thermister Short Check Error
 - : Fuser Error Heater temp High
 - : Fuser Error Heater temp Low

• Turn the power off, then back on again.

- ▼ Yes Is the thermistor open or shorted? Measure the resistance between thermistor contacts (heater contacts 120V/2Ω or 240V/7Ω, and thermistor contacts 200KΩ at room temperature) (see Figure 5-2).
- Yes Replace the fusing unit.
- ▼ No Do the thermistor connector is connected to the main control board connector?
- No Connect the thermistor connector properly.
- ▼ Yes Is the heater of the fusing unit turned on (when the heater is turned on, light is emitted)?
- Yes Check the thermistor connector or replace the main control board or the fusing unit.
- ▼ No Is the AC voltage being supplied to the connector for the heater of the power supply board? (see Figure 5-2)
- No Replace the main control board or the power supply board.
- ▼ Yes Check the heater connector cord and the heater connector for poor contact .

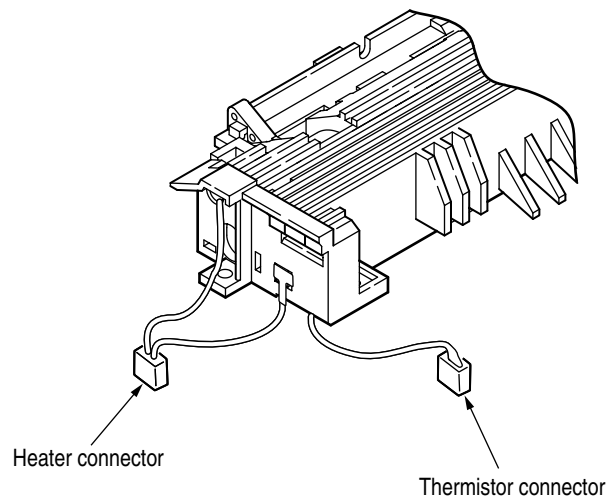
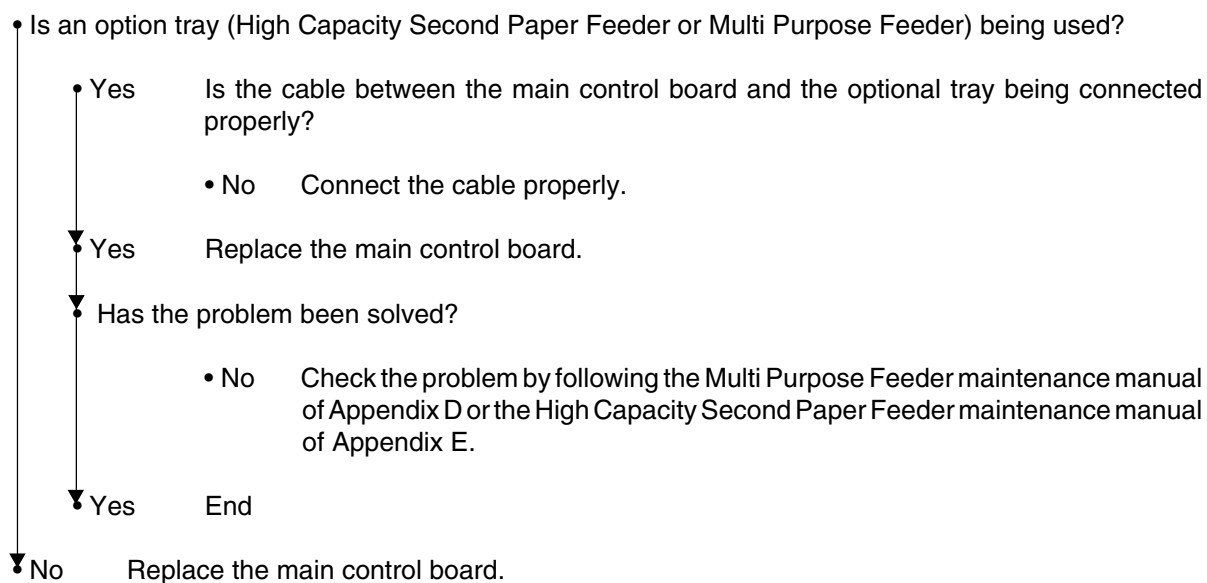
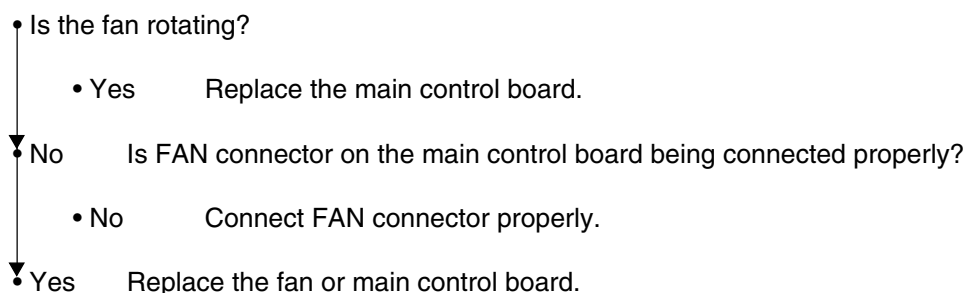


Figure 5-2

⑤ Synchronous serial I/O error (Status Message : SSIO Error) or I/F timeout between printer and optional tray (Status Message : Tray2 Timeout Error or Feeder Timeout Error)



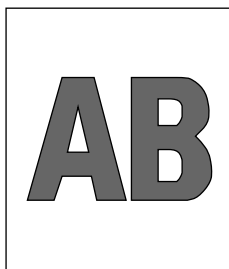
⑥ Fan error (Status Message : FAN Motor Error)



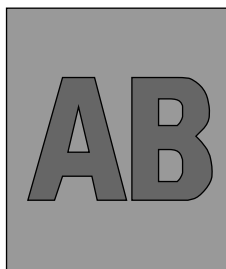
5.5.3 Image Troubleshooting

Procedures for troubleshooting for abnormal image printouts are explained below. Figure 5-3 below shows typical abnormal images.

Problem	Flowchart number
Images are light or blurred entirely (Figure 5-3 (A))	①
Dark background density (Figure 5-3 (B))	②
Blank paper is output (Figure 5-3 (C))	③
Black vertical belts or stripes (Figure 5-3 (D))	④
Cyclical defect (Figure 5-3 (E))	⑤
Prints voids	⑥
Poor fusing (images are blurred or peels off when the printed characters and images on the paper are touched by hand)	⑦
White vertical belts or streaks (Figure 5-3 (F))	⑧



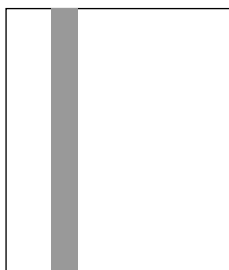
Ⓐ Light or blurred images entirely



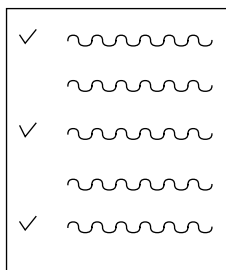
Ⓑ Dark background density



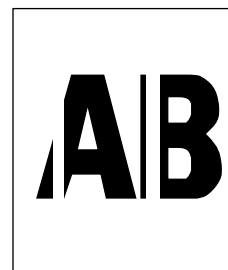
Ⓒ Blank paper



Ⓓ Black vertical belts or stripes



Ⓔ Cyclical defect



Ⓕ White vertical belts or streaks

Figure 5-3

① Images are light or blurred entirely.

• Is toner low (is the TONER LOW message displayed)?

- Yes Supply toner.

▼ No Is paper of the specified grade being used?

- No Use paper of the specified grade.

▼ Yes Is the lens surface of the LED head dirty?

- Yes Clean the lens.

▼ No Is the LED head being installed properly (check the HEAD connector of the main control board and PC connector on the LED head for proper connection)?

- No Install the LED head properly.

▼ Yes Is the contact plate of the transfer roller in contact with the contact assembly of the power supply/sensor board properly (see Figure 5-5)?

- No Adjust the contact plate of the transfer roller to make a proper contact with the high voltage/sensor board and shaft of the transfer roller.

▼ Yes Are the contact of the developing roller and the contact of the toner supply roller of the image drum cartridge in contact with the contact assembly properly (see Figure 5-4 (A) and (B))?

- No Adjust the contacts of the developing and toner supply roller to make a proper contact with the contact assembly.

▼ Yes Replace the transfer roller.

▼ Has the problem been solved?

- Yes End

▼ No Replace the image drum cartridge.

▼ Has the problem been solved?

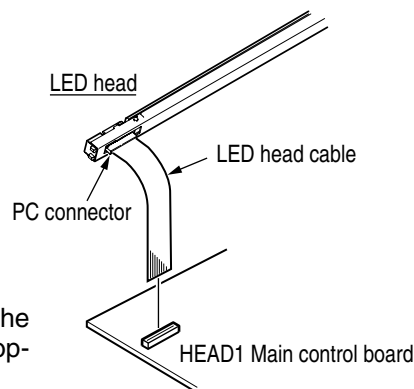
- Yes End

Note: After replacing the image drum cartridge, reset the drum counter (see User's Manual).

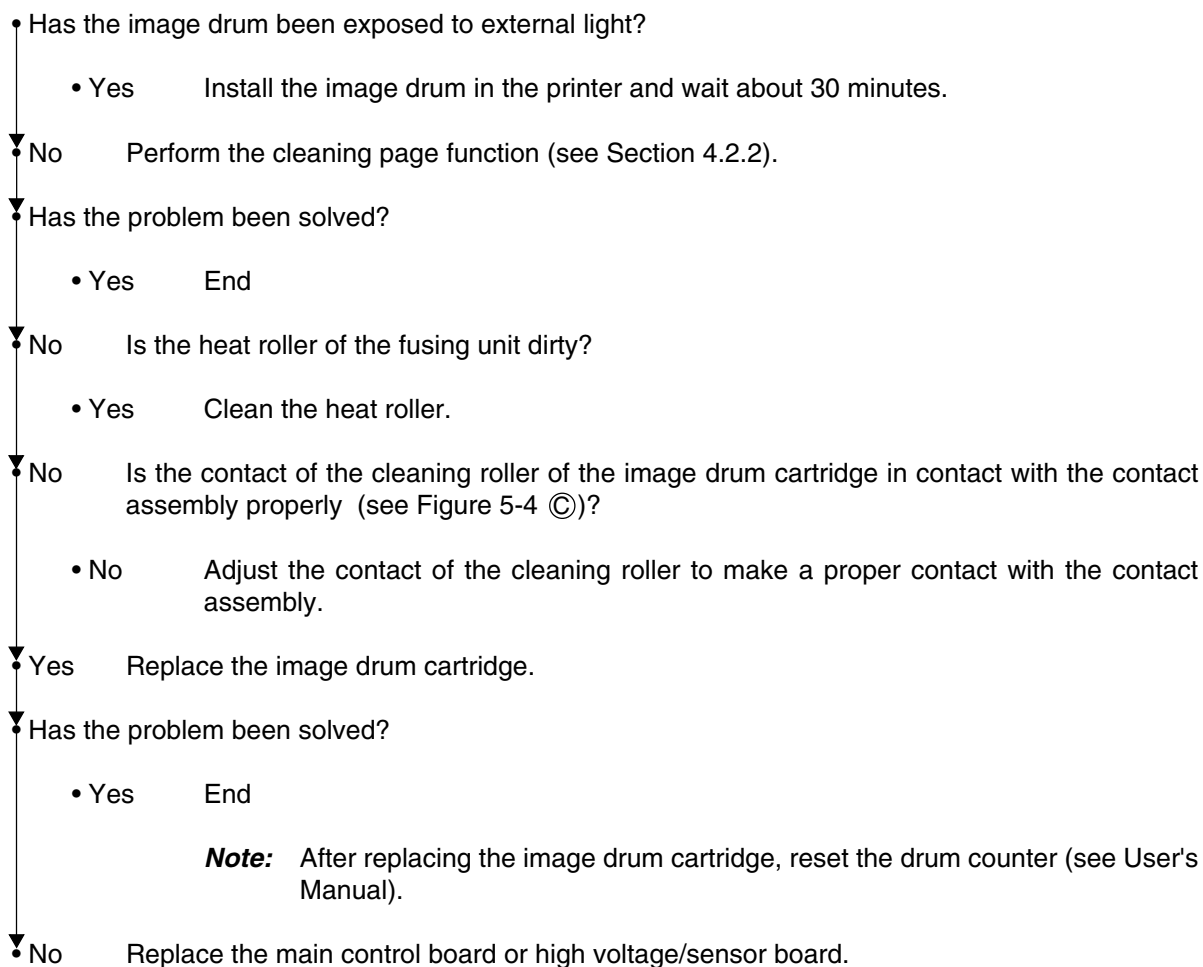
▼ No Is the tension between the back-up roller (7.52kg) and the surface of back-up roller normal?

- No Replace the back-up roller or bias spring.

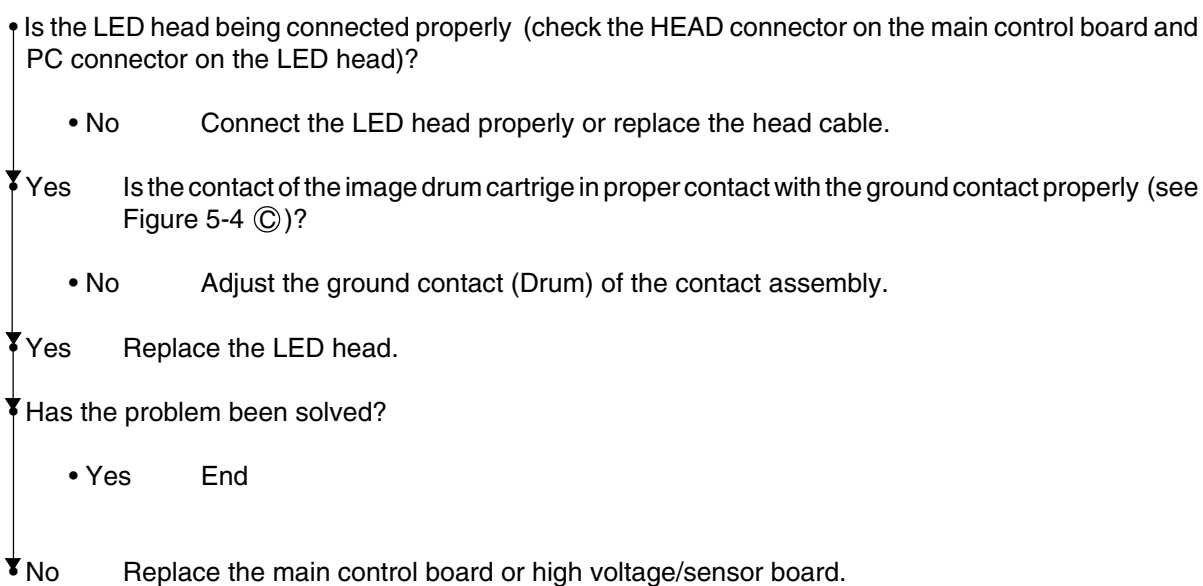
▼ Yes Replace the main control board or high voltage/sensor board.



② Dark background density



③ Blank paper is output.



④ Black vertical belts or stripes

- Perform the cleaning page function (see Section 4.2.2).

▼ Has the problem been solved?

- Yes End.

▼ No Replace the image drum cartridge.

▼ Has the problem been solved?

- Yes End

Note: After replacing the image drum cartridge, reset the drum counter (see User's Manual).

▼ Clean the LED lens array of the LED head.

▼ Has the problem been solved?

- Yes End.

▼ No Replace the LED head.

▼ Has the problem been solved?

- Yes End

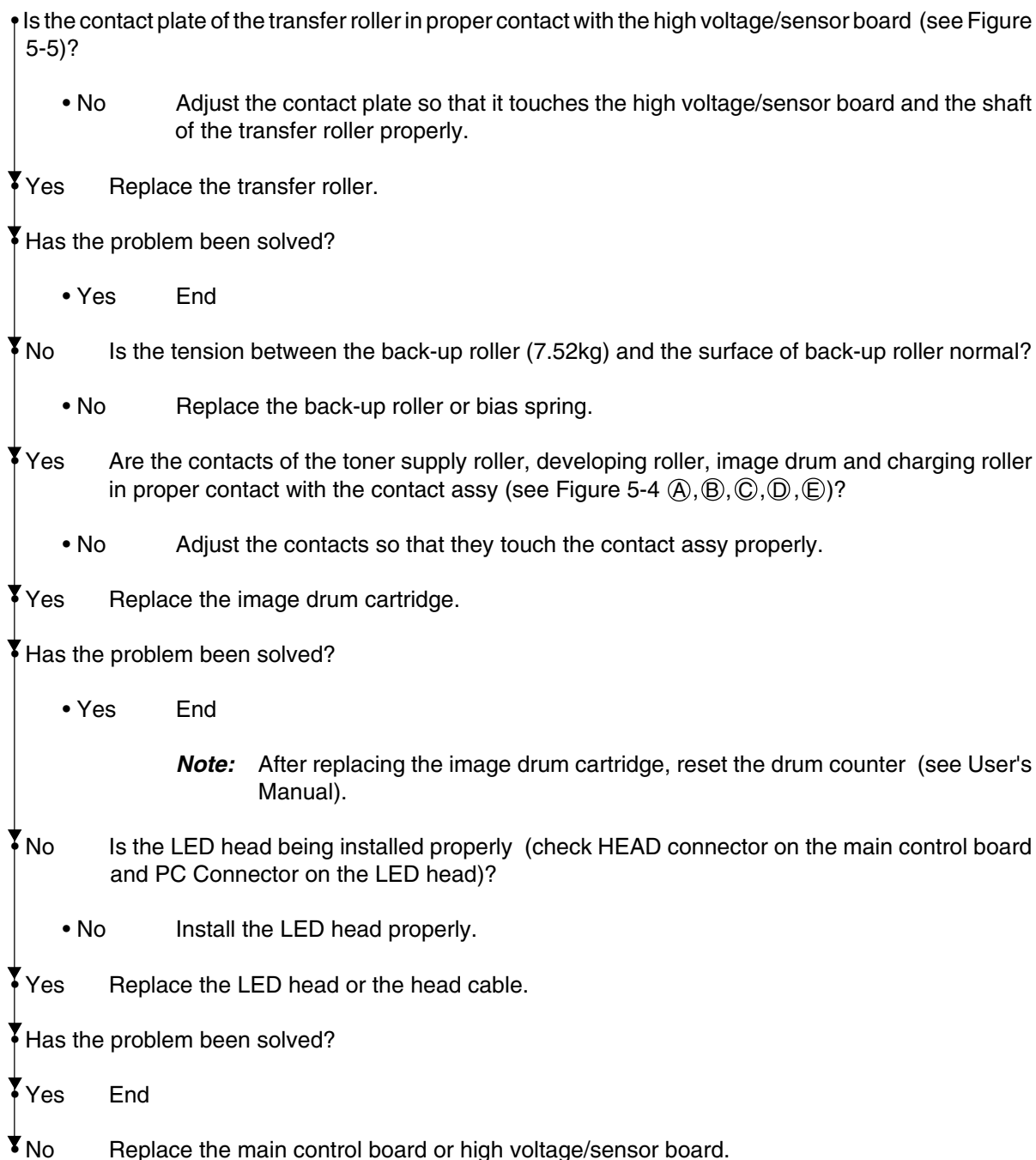
▼ No Replace the main control board or high voltage/sensor board.

⑤ Cyclical defect

	Frequency	Remedy
Image drum	3.71" (94.2mm)	Replace or clean the image drum cartridge.
Developing roller	1.86" (47.12mm)	Replace the image drum cartridge.
Toner supply roller	2.96" (75.27mm)	Replace the image drum cartridge.
Charging roller	1.21" (30.63mm)	Replace the image drum cartridge.
Cleaning roller	0.93" (23.56mm)	Replace the image drum cartridge.
Transfer roller	1.95" (49.6mm)	Replace the transfer roller.
Heat roller	2.44" (62.0mm)	Replace the fusing unit assy.
Back-up roller	2.73" (69.4mm)	Replace the back-up roller.

Note: After replacing the image drum cartridge, reset the drum counter (see User's Manual).

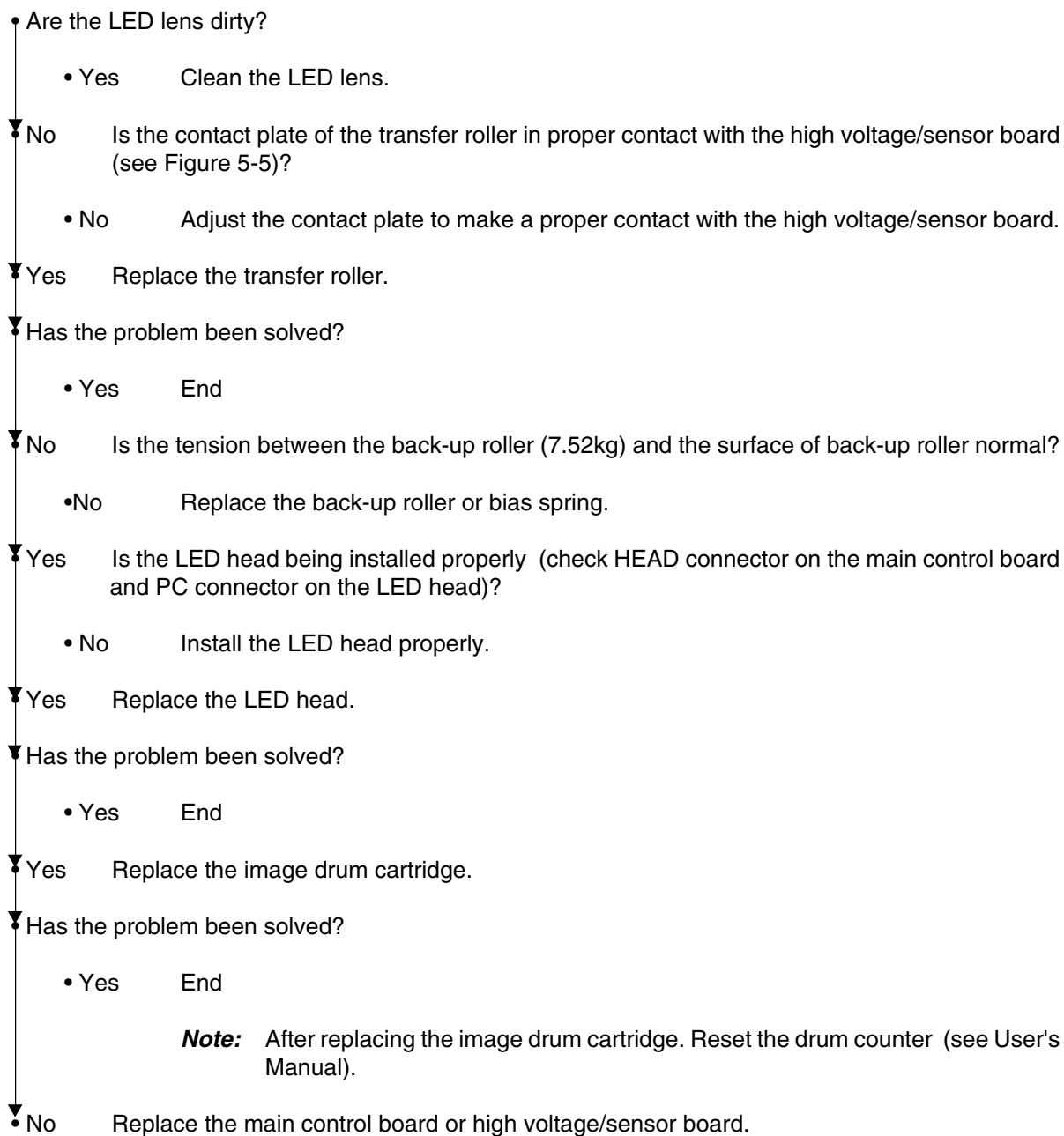
⑥ Prints voids



⑦ Poor fusing (images are blurred or peels off when the printed characters and images on the paper are touched by hand)

- Is paper of the specified grade being used?
 - No Use paper of the specified grade.
- ▼ Yes Is the tension between the back-up roller (7.52kg) and the surface of back-up roller normal?
 - No Replace the back-up roller or bias spring.
- ▼ Yes Is the connector of the fusing unit assy on the power supply/board being connected properly?
 - No Connect the fusing unit connector properly.
- ▼ Yes Replace the fusing unit assy.
- ▼ Has the problem been solved?
 - Yes End
- ▼ No Replace the main control board or power supply/board.

⑧ White vertical belts or streaks



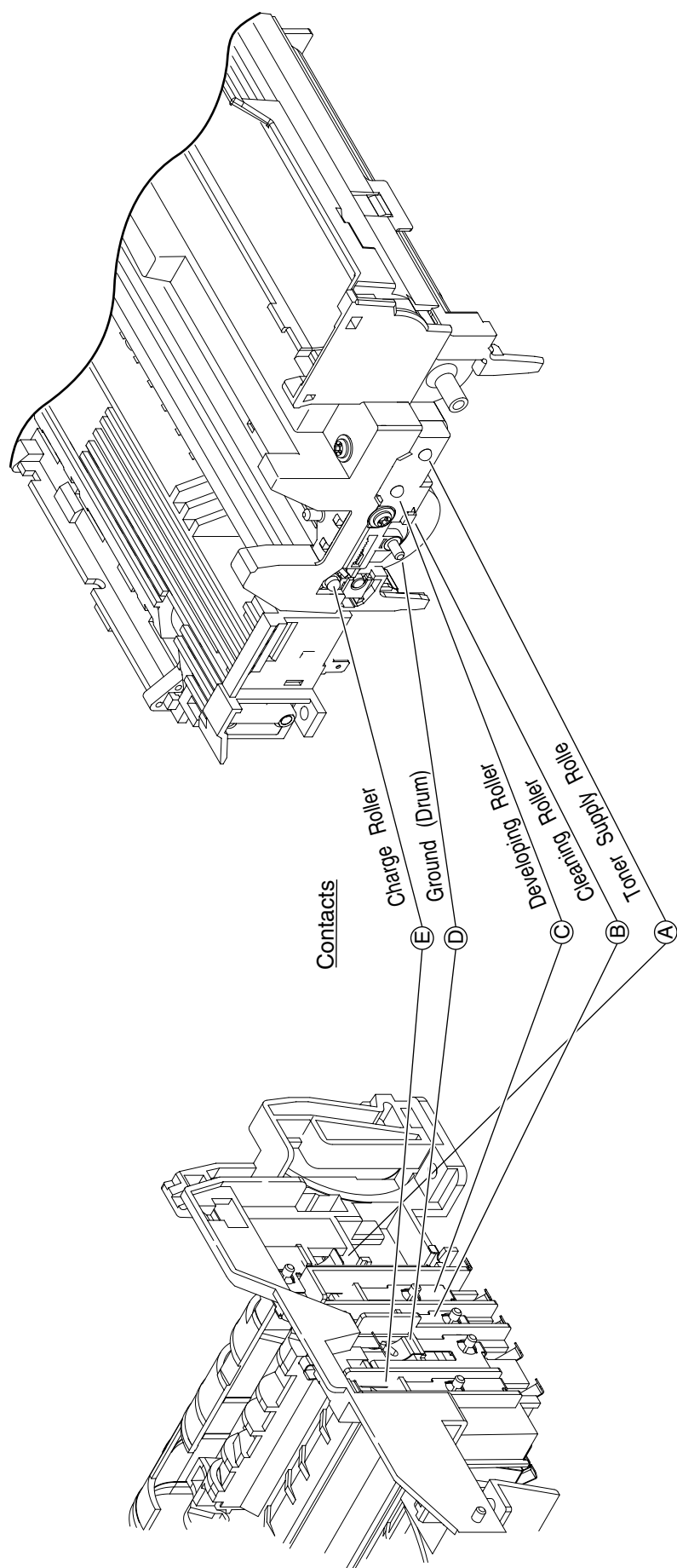


Figure 5-4

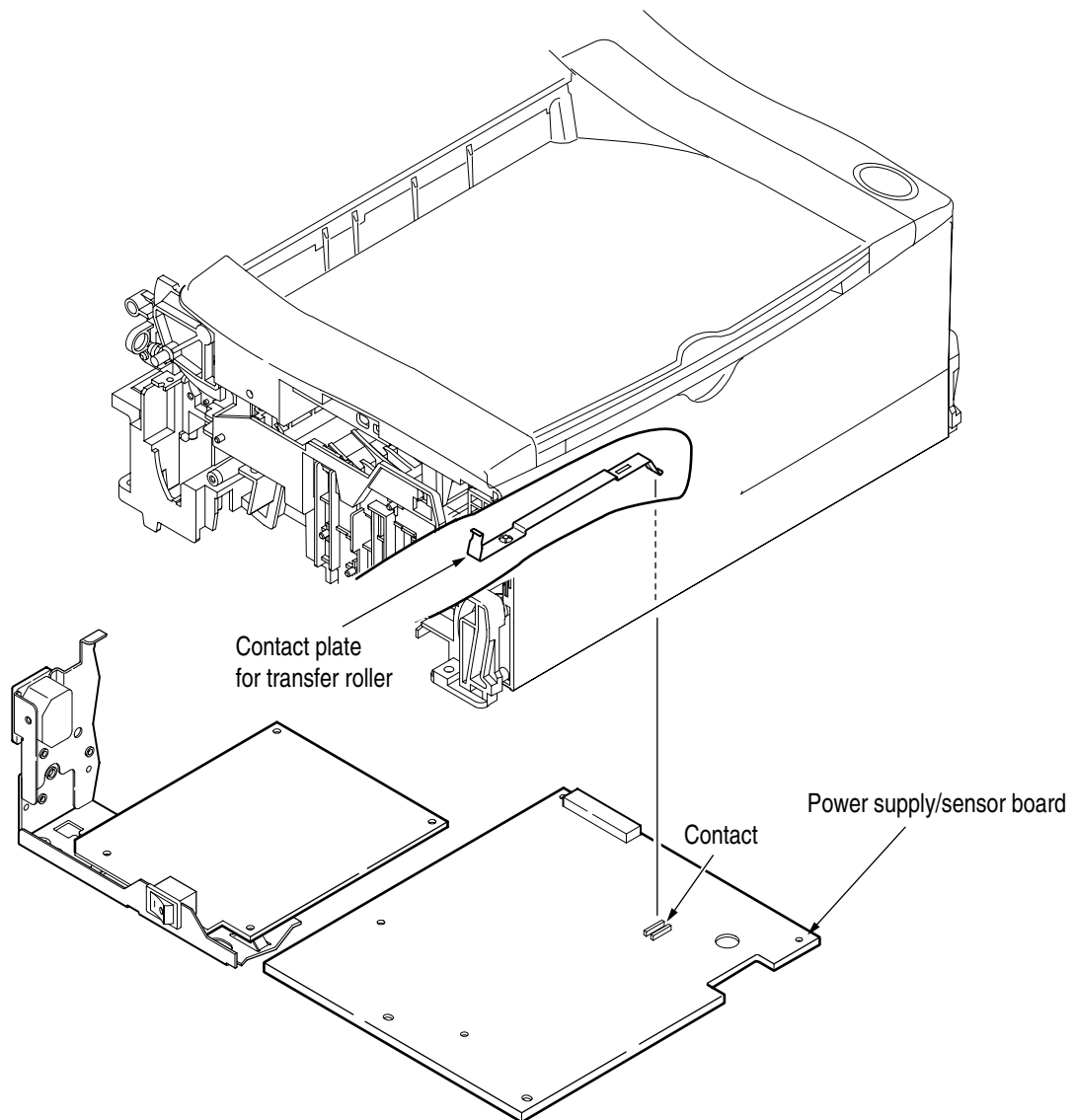
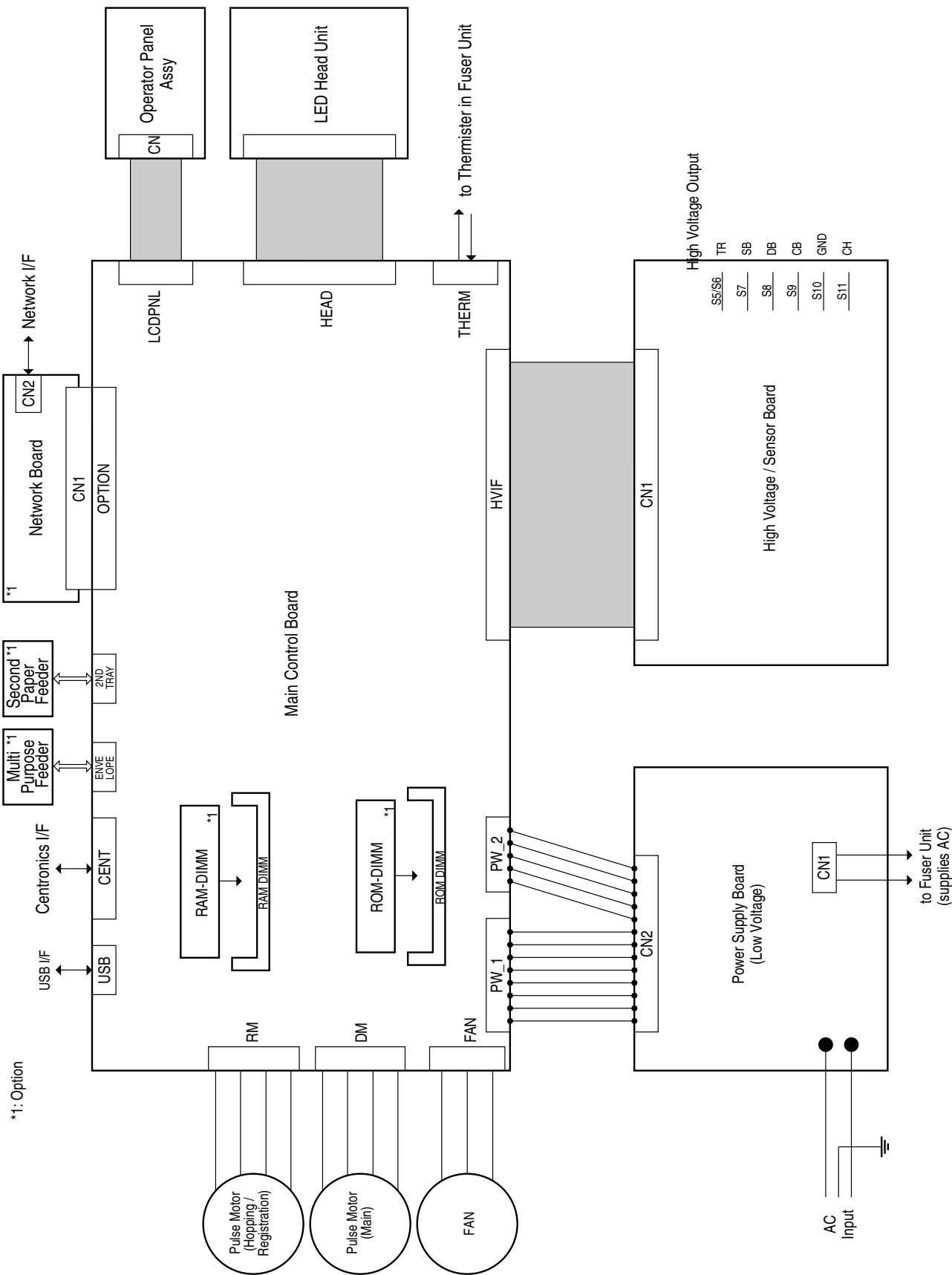


Figure 5-5

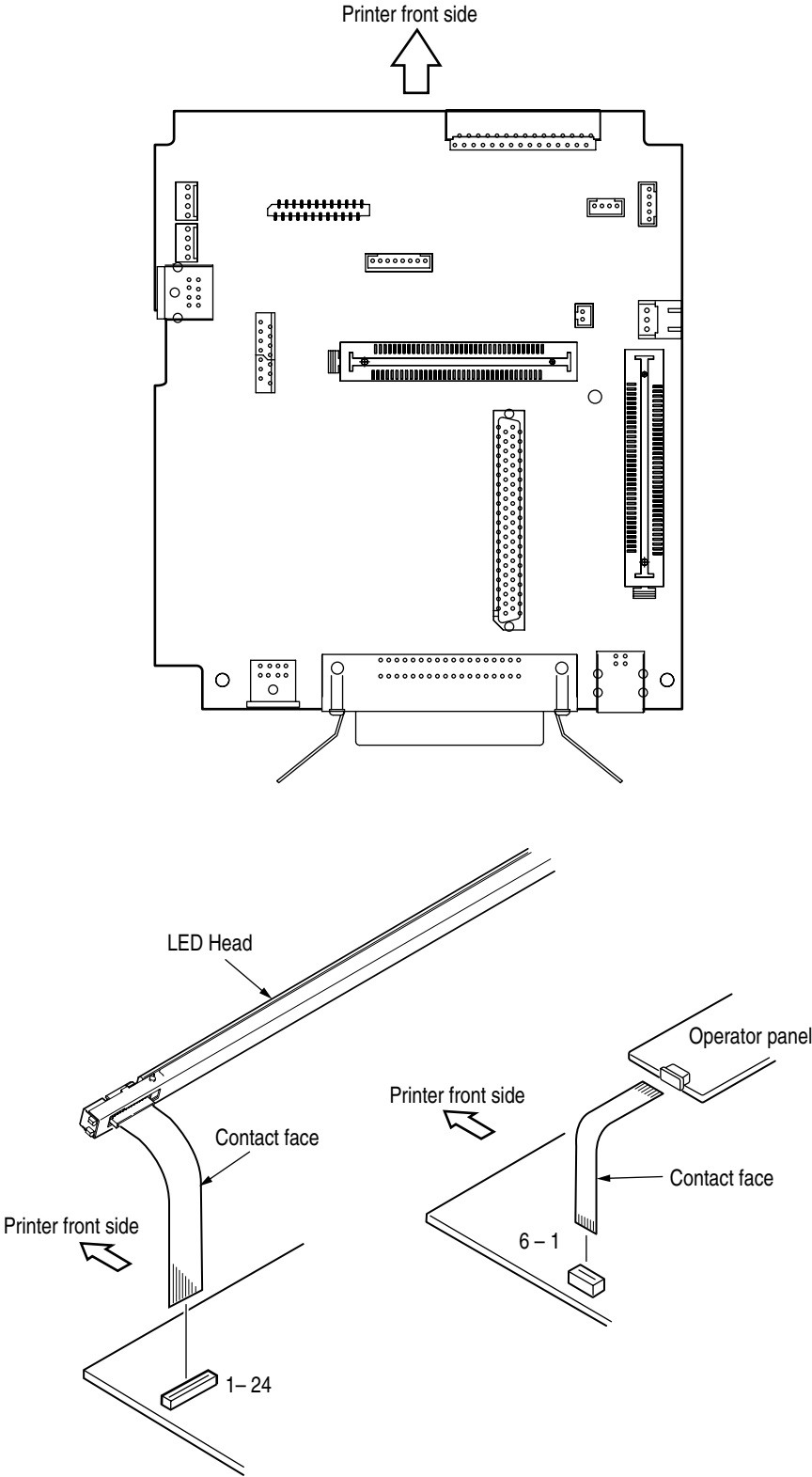
6. WIRING DIAGRAM

6.1 Interconnect Signal Diagram

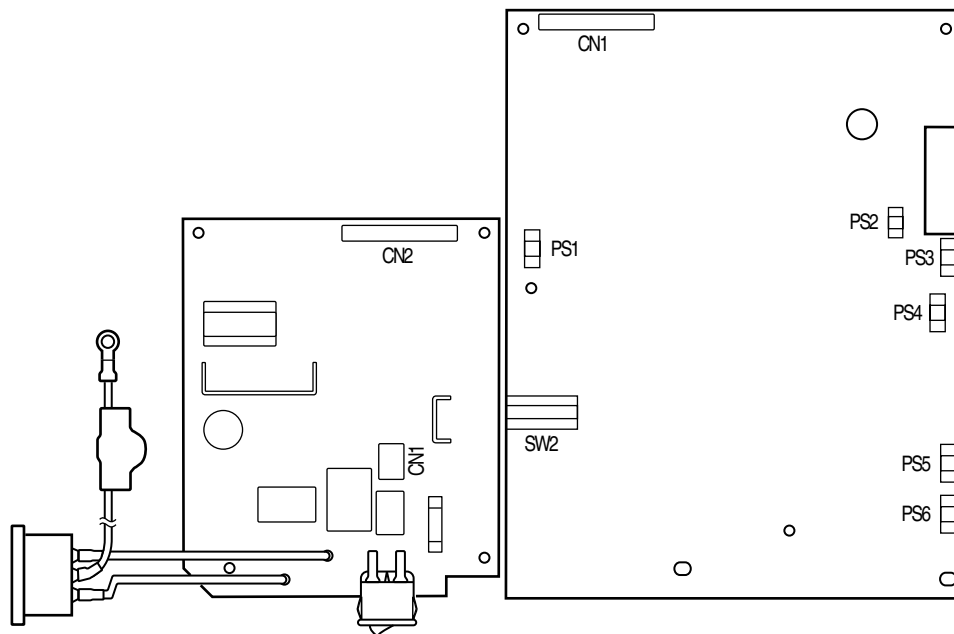


6.2 PCB Layout and Connector Signal List

(1) Main Control Board (GRG PCB or GRR-7 PCB)



(2) Power Supply/Sensor Board



- HEAD Connector Pin Assignment
(To LED head)

		PIN NO.	I/O*	Signal	Function
1		1	C	SG	Ground for Logic
	2	2	O	HDCLK-P	Clock
3		3	C	HDCLK-N	Clock
	4	4	C	SG	Ground for Logic
5		5	O	HDLD	Load
	6	6	O	HDSTB1	Hsync/CSN
7		7	O	HDDATA3	Data 3
	8	8	O	HDDATA2	Data 2
9		9	O	HDDATA1	Data 1
	10	10	O	HDDATA0	Data 0
11		11	O	HDSTB0	Strobe/SI
	12	12	O	HDSTB3	SCLK
13		13	O	HDSTB2	SO
	14	14	O	+3.3V	+3.3V for Logic
15		15	C	0VPHD	Ground for LED
	16	16	O	HEAD	+5V for LED
17		17	C	0VPHD	Ground for LED
	18	18	O	HEAD	+5V for LED
19		19	C	0VPHD	Ground for LED
	20	20	O	HEAD	+5V for LED
21		21	C	0VPHD	Ground for LED
	22	22	O	HEAD	+5V for LED
23		23	C	0VPHD	Ground for LED
	24	24	O	HEAD	+5V for LED

* O: Out
C: Common

- LCDPNL Connector Pin Assignment
(To Operator Panel)

		PIN NO.	I/O*	Signal	Function
1		1	O	+5V	+5V
	2	2	O	READY	LED (READY) ON
3		3	O	PAPER	LED (PAPER) ON
	4	4	O	ALARM	LED (ALARM) ON
5		5	I	SW	Switch
	6	6	C	SG	Ground

* I: In
O: Out
C: Common

- ENVELOPE Connector Pin Assignment
(To Multi Purpose Feeder)

		PIN NO.	I/O*	Signal	Function
5	8	1	O	OPPAP-N	Paper Sensor 1
2	7	2	O	OPSCCK-N	Clock
1	4	3	O	OPSD-N	Data
3	6	4	I	OPSDP-N	OPT send data
		5	C	OVP	Analog Ground
		6	O	+38V	+38V
		7	C	SG	Logic Ground
		8	O	+5VA	+5V

* I: In
O: Out
C: Common

- 2NDTRAY Connector Pin Assignment
(To 2nd Tray)

		PIN NO.	I/O*	Signal	Function
5	8	1	O	OPPAP-N	Paper Sensor 1
2	7	2	O	OPSCCK-N	Clock
1	4	3	O	OPSD-N	Data
3	6	4	I	OPSDP-N	OPT send data
		5	C	OVP	Analog Ground
		6	O	+38V	+38V
		7	C	SG	Logic Ground
		8	O	+5VA	+5V

* I: In
O: Out
C: Common

- HVIF Connector Pin Assignment
(To High Voltage Unit/Sensor Board)

		PIN NO.	I/O*	Signal	Function
1		1	I	WRSNS-N	Write Sensor
	2	2	I	IN1SNS-N	Paper Sensor 1
3		3	I	TONER-N	Toner Sensor
	4	4	I	IN2SNS-N	Paper Sensor 2
5		5	I	PAPER-N	Paper Out Sensor
	6	6	C	SG	Ground
7		7	O	SBPWN-P	SB2 Output
	8	8	O	CB2PWN-P	CB2 Output
9		9	O	DB1PWM	DB1 Output
	10	10	C	SG	Ground
11		11	O	CB1PWM	Cb1 Output
	12	12	C	SG	Ground
13		13	I	TRI_FB	TR1 Current Feedback
	14	14	I	TRV_FB	TR1 Voltage Feedback
15		15	I	DB2_V_FB	DB2 Voltage Feedback
	16	16	I	CHI	CH Current Feedback
17		17	I	CH_V_FB	CH Voltage Feedback
	18	18	I	DB_I	DB Current Feedback
19		19	I	SB_V_FB	SB2 Voltage Feedback
	20	20	C	SG	Ground
21		21	O	CHPWM-P	CH Output Control
	22	22	O	DB2PWM	DB2 Output
23		23	O	TR2PWM-P	TR2 output
	24	24	O	TR1PWM-P	TR1 Output Control
25		25	O	+5V	+5V
	26	26	O	+5V	+5V
27		27	C	SG	Ground
	28	28	C	SG	Ground
29		29	I	OUTSNS-N	Out Sensor
	30	30	I	CVOPN-N	Cover Open

* I: In
O: Out
C: Common

- PW_1 Connector Pin Assignment
(To Power Supply Unit)

	PIN NO.	I/O*	Signal	Function
1	1	I	+38V	+38V
2	2	I	+38V	+38V
3	3	C	0VP	Analog Ground
4	4	C	0VP	Analog Ground
5	5	I	0VPHD	Ground for LED
6	6	I	0VPHD	Ground for LED
7	7	I	HEAD	+5V for LED
8	8	I	HEAD	+5V for LED

* I: In
O: Out
C: Common

- PW_2 Connector Pin Assignment
(To Power Supply Unit)

	PIN NO.	I/O*	Signal	Function
1	1	C	SG	Ground for Logic
2	2	C	SG	Ground for Logic
3	3	I	+5V	+5V for Logic
4	4	I	+5V	+5V for Logic
5	5	O	HEATON_N	Heater On

* I: In
O: Out
C: Common

- THERM Connector Pin Assignment
(To Thermistor)

	PIN NO.	I/O*	Signal	Function
1	1	O	+5V	+5V
2	2	I	THERM	Heater

* I: In
O: Out

• OPTION Connector Pin Assignment
(To Option Board [Network or RS232C])

Pin No.	I/O*	Signal	Function	Pin No.	I/O*	Signal	Function
41		01		01	C	SG	Ground
	42		02	02	C	SG	Ground
43		03		03	O	PPGNT0-N	Bus Grant (PCI)
	44		04	04	I/O	PPDVSL-N	Device select (PCI)
45		05		05	I/O	PPTRDY-N	Target Ready (PCI)
	46		06	06	I/O	PPFRM-N	Frame (PCI)
47		07		07		NC	N.C.
	48		08	08		NC	N.C.
49		09		09		NC	N.C.
	50		10	10	O	OPSCC_RXD	RXD (RS232C)
51		11		11	O	OPSCC_DSR	DSR (RS232C)
	52		12	12	I/O	PPC_BE3	Command/Byte Enable 3 (PCI)
53		13		13	I/O	PPC_BE1	Command/Byte Enable 1 (PCI)
	54		14	14	I	PRINT0-N	Interrupt (PCI)
55		15		15	O	PERIWR-N	FlashROM Write Enable
	56		16	16	O	NICFROM_CS	FlashROM Chip Select
57		17		17	I/O	SDT22	AD Bus 22
	58		18	18	I/O	SDT20	AD Bus 20
59		19		19	C	SG	Ground
	60		20	20	C	SG	Ground
61		21		21	I/O	SDT18	AD Bus 18
	62		22	22	I/O	SDT16	AD Bus 16
63		23		23	I/O	SDT25	AD Bus 25
	64		24	24	I/O	SDT27	AD Bus 27
65		25		25	I/O	SDT29	AD Bus 29
	66		26	26	I/O	SDT31	AD Bus 31
67		27		27	I/O	SDT9	AD Bus 9
	68		28	28	I/O	SDT11	AD Bus 11
69		29		29	I/O	SDT13	AD Bus 13
	70		30	30	I/O	SDT15	AD Bus 15
71		31		31	I/O	SDT6	AD Bus 6
	72		32	32	I/O	SDT4	AD Bus 4
73		33		33	I/O	SDT2	AD Bus 2
	74		34	34	I/O	SDT0	AD Bus 0
75		35		35	I	OPNIC-N	NIC Detect
	76		36	36	O	RESET-N	Reset
77		37		37		NC	N.C.
	78		38	38	C	SG	Ground
79		39		39	C	SG	Ground
	80		40	40	O	+5V	+5V
				80	O	+5V	+5V

* O : Out
I : In
C : Common

• FAN Connector Pin Assignment
(To Fan)

PIN NO.	I/O*	Signal	Function
1	O	FANPOW	Power Supply for Fan driving
2	C	SG	Ground
3	I	FANALM-P	Fan Alarm

* I: In
O: Out
C: Common

- USB Connector Pin Assignment
(USB I/F)

1	3	PIN NO.	I/O*	Signal	Description
2	4	1	I	VCC	VCC
		2	I/O	D-	D-
		3	I/O	D+	D+
		4	C	SG	Ground

* I: In
O: Out
C: Common

- CENT Connector Pin Assignment
(IEEE1284 I/F)

		Pin No.	I/O*	Signal	Function	Pin No.	I/O*	Signal	Function
1	19	1	I	STB-N	Strobe	19	C	SG	Logic Ground
2	20	2	C	DATA0-P	Data0	20	C	SG	Logic Ground
3	21	3	C	DATA1-P	Data1	21	C	SG	Logic Ground
4	22	4	C	DATA2-P	Data2	22	C	SG	Logic Ground
5	23	5	C	DATA3-P	Data3	23	C	SG	Logic Ground
6	24	6	C	DATA4-P	Data4	24	C	SG	Logic Ground
7	25	7	C	DATA5-P	Data5	25	C	SG	Logic Ground
8	26	8	C	DATA6-P	Data6	26	C	SG	Logic Ground
9	27	9	C	DATA7-P	Data7	27	C	SG	Logic Ground
10	28	10	O	ACK-N	Acknowledge	28	C	SG	Logic Ground
11	29	11	O	BUSY-P	Busy	29	C	SG	Logic Ground
12	30	12	O	PE-P	Paper End	30	C	SG	Logic Ground
13	31	13	O	SEL-P	Select	31	I	IPRIM-N	Iprime
14	32	14	I	AUTOFEED-N	Auto Feed	32	O	FAULT-N	Fault
15	33	15		NC	N.C.	33	C	SG	Logic Ground
16	34	16	C	SG	Logic Ground	34		NC	N.C.
17	35	17	C	FG	Frame Ground	35	O	HILEVEL	High Level
18	36	18	O	5VA	+5V	36	I	SELIN-N	Select In

* O : Out
I : In
C : Common

- RM Connector Pin Assignment
(To Hopping / Resistration Motor)

	PIN NO.	I/O*	Signal	Function
1	1	O	RMPH1-P	Coil 1-P
2	2	O	RMPH1-N	Coil 1-N
3	3	O	RMPH2-P	Coil 2-P
4	4	O	RMPH2-N	Coil 2-N

* O: Out

- DM Connector Pin Assignment
(To Main Motor)

	PIN NO.	I/O*	Signal	Function
1	1	O	DMPH1-P	Coil 1-P
2	2	O	DMPH1-N	Coil 1-N
3	3	O	DMPH2-P	Coil 2-P
4	4	O	DMPH2-N	Coil 2-N

* O: Out

- ROM_DIMM Connector Pin Assignment

	Pin No.	I/O*	Signal	Function
01	01	C	SG	Ground
02	02		NC	N.C.
03	03		NC	N.C.
04	04		NC	N.C.
05	05		NC	N.C.
06	06		NC	N.C.
07	07		NC	N.C.
08	08		NC	N.C.
09	09		NC	N.C.
10	10	O	+3.3V	+3.3V
11	11		NC	N.C.
12	12		NC	N.C.
13	13		NC	N.C.
14	14		NC	N.C.
15	15	C	SG	Ground
16	16	C	SG	Ground
17	17		NC	N.C.
18	18		NC	N.C.
19	19		NC	N.C.
20	20		NC	N.C.
21	21	I/O	DBUS11	Data Bus 11
22	22	I/O	DBUS4	Data Bus 4
23	23	I/O	DBUS3	Data Bus 3
24	24	I/O	DBUS12	Data Bus 12
25	25	I/O	DBUS10	Data Bus 10
26	26	I/O	DBUS5	Data Bus 5
27	27	C	SG	Ground
28	28	C	SG	Ground
29	29	I/O	DBUS2	Data Bus 2
30	30	O	+3.3V	+3.3v
31	31	I/O	DBUS9	Data Bus 9
32	32	I/O	DBUS13	Data Bus 13
33	33	I/O	DBUS1	Data Bus 1
34	34	I/O	DBUS6	Data Bus 6
35	35	I/O	DBUS8	Data Bus 8
36	36	I/O	DBUS14	Data Bus 14

	Pin No.	I/O*	Signal	Function
37	37	I/O	DBUS0	Data Bus 0
38	38	I/O	DBUS7	Data Bus 7
39	39	C	SG	Ground
40	40	C	SG	Ground
41	41	O	WBEN0	Write Enable
42	42	I/O	DBUS15	Data Bus 15
43	43	O	CPU_CS3-N	Chip select 3
44	44	O	CPU_OE-N	Output Enable
45	45	O	ABUS14	Address Bus 14
46	46	O	CPU_CS2-N	Chip select 2
47	47	O	ABUS15	Address Bus 15
48	48	O	ABUS30	Address Bus 30
49	49	O	ABUS16	Address Bus 16
50	50	O	ABUS29	Address Bus 29
51	51	O	ABUS17	Address Bus 17
52	52	O	ABUS28	Address Bus 28
53	53	O	ABUS18	Address Bus 18
54	54	O	ABUS27	Address Bus 27
55	55	O	ABUS19	Address Bus 19
56	56	O	ABUS26	Address Bus 26
57	57	O	ABUS20	Address Bus 20
58	58	O	ABUS25	Address Bus 25
59	59	O	ABUS21	Address Bus 21
60	60	O	ABUS24	Address Bus 24
61	61	O	+3.3V	+3.3v
62	62	O	ABUS23	Address Bus 23
63	63	O	ABUS22	Address Bus 22
64	64	O	ABUS13	Address Bus 13
65	65	O	ABUS11	Address Bus 11
66	66	O	ABUS12	Address Bus 12
67	67	O	ABUS10	Address Bus 10
68	68	O	ABUS9	Address Bus 9
69	69	O	ABUS8	Address Bus 8
70	70	O	ABUS7	Address Bus 7
71	71	O	RESET-N	Reset
72	72	C	SG	Ground

* O : Out
I : In
C : Common

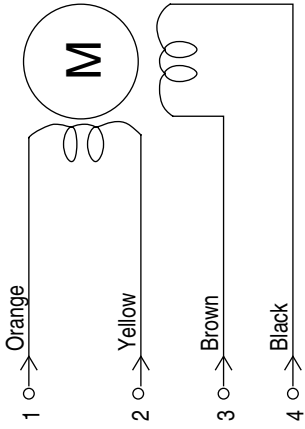
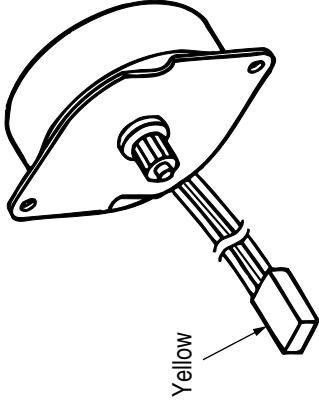
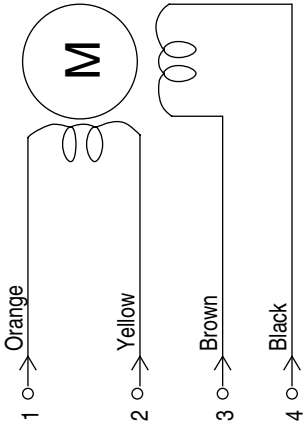
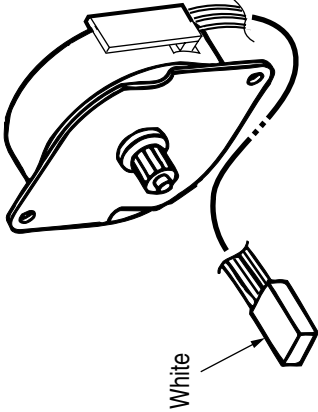
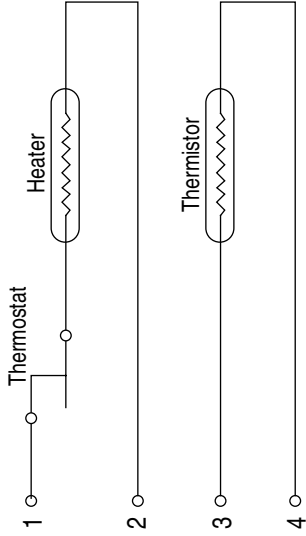
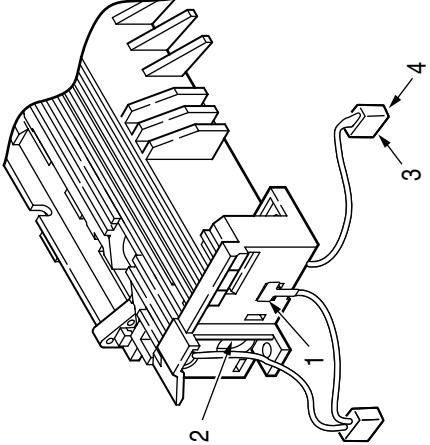
- RAM_DIMM Connector Pin Assignment

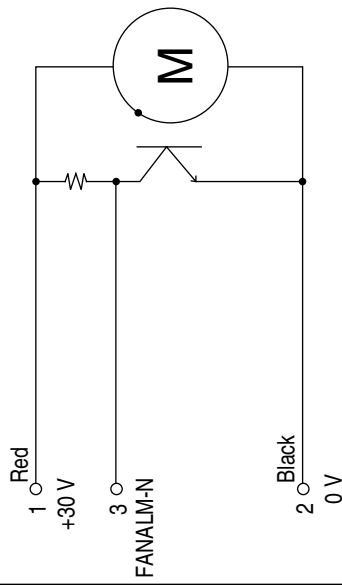
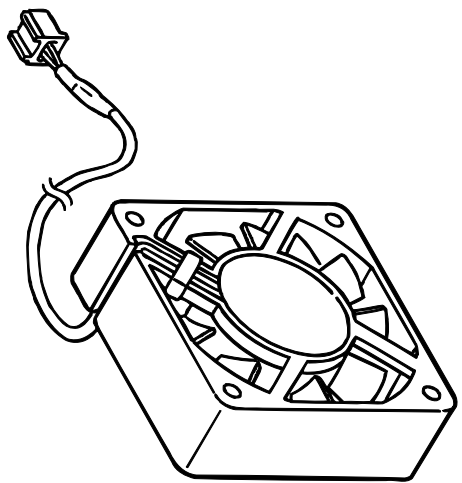
	Pin No.	I/O*	Signal	Function
01	01	C	SG	Ground
02	02		NC	N.C.
03	03		NC	N.C.
04	04		NC	N.C.
05	05		NC	N.C.
06	06		NC	N.C.
07	07		NC	N.C.
08	08		NC	N.C.
09	09		NC	N.C.
10	10	O	+3.3V	+3.3V
11	11		NC	N.C.
12	12		NC	N.C.
13	13		NC	N.C.
14	14		NC	N.C.
15	15	C	SG	Ground
16	16	C	SG	Ground
17	17		NC	N.C.
18	18		NC	N.C.
19	19		PERIRD-N	N.C.
20	20		NC	N.C.
21	21		NC	N.C.
22	22	O	RAM_CS2-N	Chip select 2
23	23		NC	N.C.
24	24	O	SAD3	Address Bus 3
25	25	O	RAM_CLK1	Clock
26	26	O	SAD2	Address Bus 2
27	27	C	SG	Ground
28	28	C	SG	Ground
29	29	O	SAD4	Address Bus 4
30	30	O	+3.3V	+3.3v
31	31	O	SAD5	Address Bus 5
32	32	O	SAD1	Address Bus 1
33	33	O	SAD6	Address Bus 6
34	34	O	SAD0	Address Bus 0
35	35	O	SAD7	Address Bus 7
36	36	O	SAD10	Address Bus 10

	Pin No.	I/O*	Signal	Function
37	37	O	SAD8	Address Bus 8
38	38	O	SAD13	Address Bus 13
39	39	C	SG	Ground
40	40	C	SG	Ground
41	41	O	SAD9	Address Bus 9
42	42	O	SAD12	Address Bus 12
43	43	O	SAD11	Address Bus 11
44	44	O	RAM_CS1-N	Chip select 1
45	45		PERIWR-N	Address Bus 14
46	46	O	RAM_RAS-N	Row Address
47	47	O	RAM_CKE-N	Clock Enable
48	48	C	SG	Ground
49	49	O	RAM_CLK1	Clock
50	50	O	RAM_CAS-N	Column Address Strobe
51	51	O	RAM_DQM1	Byte Enable 1
52	52	O	RAM_WE-N	Write Enable
53	53	I/O	SDT8	Data Bus 8
54	54	O	RAM_DQM0	Write Enable 0
55	55	I/O	SDT9	Data Bus 9
56	56	I/O	SDT7	Data Bus 7
57	57	I/O	SDT10	Data Bus 10
58	58	I/O	SDT6	Data Bus 6
59	59	I/O	SDT11	Data Bus 11
60	60	I/O	SDT5	Data Bus 5
61	61	O	+3.3V	+3.3v
62	62	I/O	SDT4	Data Bus 4
63	63	I/O	SDT12	Data Bus 12
64	64	I/O	SDT3	Data Bus 3
65	65	I/O	SDT13	Data Bus 13
66	66	I/O	SDT2	Data Bus 2
67	67	I/O	SDT14	Data Bus 14
68	68	I/O	SDT1	Data Bus 1
69	69	I/O	SDT15	Data Bus 15
70	70	I/O	SDT0	Data Bus 0
71	71	I	OPRAM-N	RAM-DIMM Detect
72	72	C	SG	Ground

* O : Out
 I : In
 C : Common

6.3 Resistance Check

Unit	Circuit Diagram	Illustration	Resistance
Hopping / Registration motor			Between Pins 1 and 2: 7.9Ω Between Pins 3 and 4: 7.9Ω
Main/drum motor			Between Pins 1 and 2: 8.6Ω Between Pins 3 and 4: 8.6Ω
Fusing unit			Between Pins 1 and 2: 120V 2Ω 240V 7Ω Between Pins 3 and 4: 200KΩ (at room temperature)

Unit	Circuit Diagram	Illustration	Resistance
Fan			

APPENDIX A RS-232C SERIAL INTERFACE (option)

1) Connector

- Printer side : 25-pin receptacle
Type DB-25S (made by Canon) or equivalent
- Cable side : 25-pin plug
Type DB-25S (made by Canon)
Shell
Type DB-C8-J10-F2-1 (made by Nihon Kouku Denshi) or equivalent

Note: Plug shall be fixable with a lock screw.

2) Cable

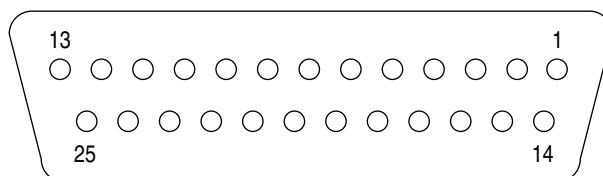
- Cable length : 6 ft (1.8 m) max. (cable shall be shielded)

Note: Cable is not provided.

3) Interface signal

Pin No.	Signal name	Abbreviation	Signal direction	Functions
1	Frame Ground	FG		Frame Ground
2	Transmitted Data	TD	← PR	Transmitted Data
3	Received Data	RD	→ PR	Received Data
4	Request to Send	RTS	← PR	Stay space level
5	-			(Not connected)
6	-			(Not connected)
7	Signal Ground	SG		Signal Ground
9 ~ 17	-			(Not connected)
18	-			(Not connected)
19	-			(Not connected)
20	Data Terminal Ready	DTR	← PR	Data terminal ready
21 ~ 25	-			(Not connected)

- Connector pin arrangement



(View from the cable side)

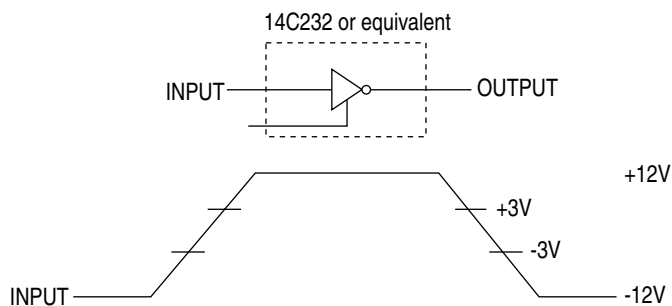
When the Ready/Busy protocol is used for the buffer busy control method, the busy signal can be set to Pin-20 (DTR) in the menu.

4) Signal Level

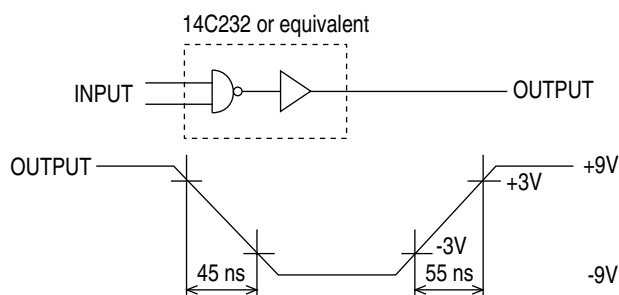
- MARK polarity : -3V to -15V (LOGIC = 1)
- SPACE polarity : +3V to +15V (LOGIC = 0)

5) Interface Circuit

a) Receiving Circuit



b) Sending Circuit



Note: The signal levels described above is for the case where $3K\ \Omega \times 15pF$ is connected to the terminal.

6) Receive Margin

37% min. at all reception rates.

7) Communications Protocol

- READY/BUSY protocol
- X-ON/X-OFF protocol

APPENDIX B CENTRONICS PARALLEL INTERFACE

1) Connector

- Printer side : 36-pin receptacle
(single port) Type 57RE-40360-730B-D29A (made by Daiichi Denshi), CN-AX05841A36AT (made by Ougat) or equivalent
- Cable side : 36-pin plug
Type 57-30360 (made by Daiichi Denshi) or equivalent
Plug-552274-1 (AMP), 552073-1 (AMP) or equivalent

2) Cable

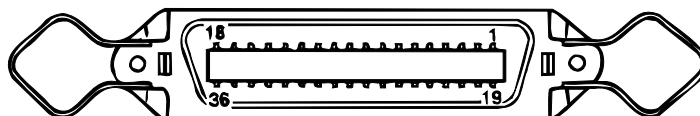
- Cable length : 6 ft (1.8 m) max.
(A Shielded cable composed of twisted pair wires is recommended for noise prevention.)

Note: Cable is not supplied with the printer, and is not available from Oki.

3) Table of Parallel I/F Signals

Pin No.	Signal name	Signal direction	Functions
1	DATA STROBE	→ PR	Parallel data sampling strobe
2	DATA BIT - 1	→ PR	PR Parallel input and output data
3	DATA BIT - 2		
4	DATA BIT - 3		
5	DATA BIT - 4		
6	DATA BIT - 5		
7	DATA BIT - 6		
8	DATA BIT - 7		
9	DATA BIT - 8		
10	ACKNOWLEDGE	← PR	Completion of data input or end of a function
11	BUSY	← PR	During print processing or alarm
12	PAPER END	← PR	End of paper
13	SELECT	← PR	Select state (ON-LINE)
14	AUTOFEED	→ PR	Request to change mode
15	-		(Not used)
16	0V		Signal ground
17	CHASSIS GROUND		Chassis ground
18	+5V	← PR	50 mA max.
19 ⋮ 30	0V		Signal ground
31	INPUT PRIME	→ PR	Initializing signal
32	FAULT	← PR	End of paper or during alarm
33	-		Signal ground
34	-		(Not used)
35	-		High level (3.3 kΩ)
36	SELECT IN	→ PR	Request to change mode

• Connector pin arrangement



4) Signal Level

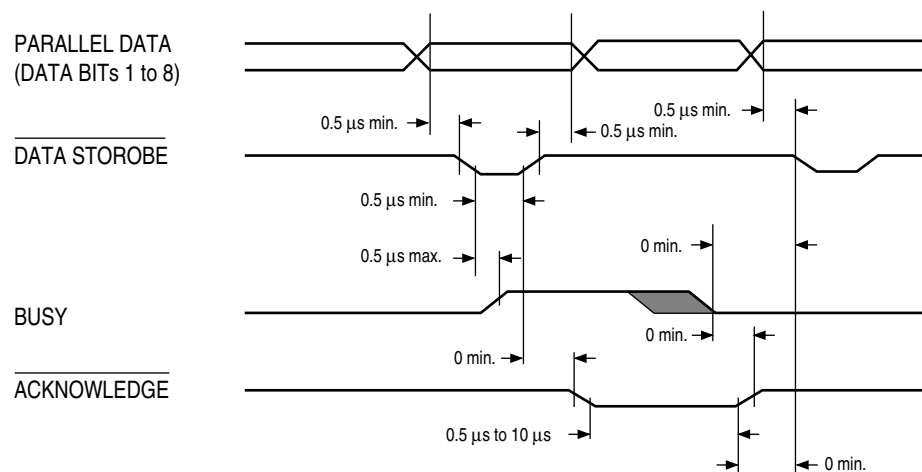
- LOW : 0 V to +0.8 V
- HIGH : +2.4 V to 5.0 V

5) Specifications

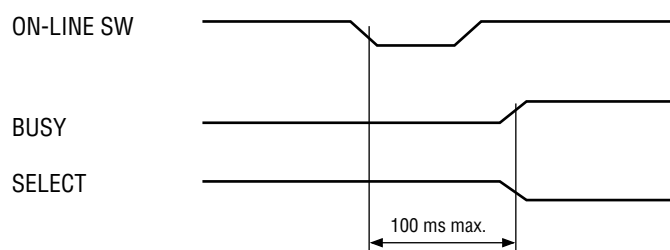
Item	Description
Mode	Compatibility mode, Nibble mode, ECP mode
Data bit length	8 bits (in the compatibility mode)
Input prime	Valid/Invalid
Receive buffer	0.1M, 0.2M, 0.5M Bytes
Control	Handshaking control is performed in each mode. Data received from the host is stored in the receive buffer. Busy control is performed. Signal lead control is performed.

6) Timing Charts

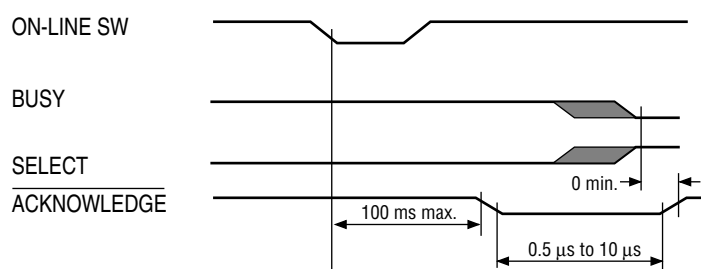
a) Data receiving timing



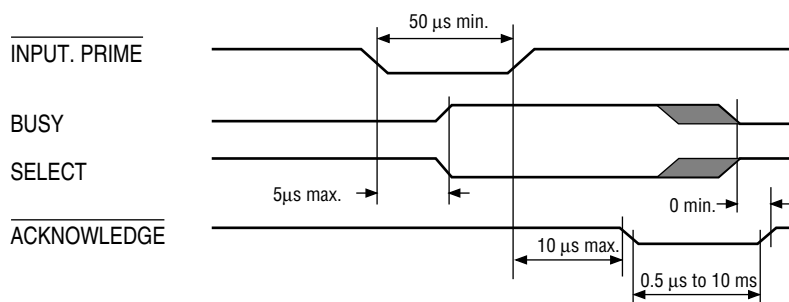
b) On-line \rightarrow off-line switching timing by ON-LINE SW



c) Off-line \rightarrow on-line switching timing by ON-LINE SW



d) INPUT PRIME timing (when set to the effective INPUT PRIME signal)



APPENDIX C Universal Serial Bus (USB)

Universal Serial Bus Specification Revision 2.0 full speed compliance.

1) Connector

- Printer Side : "B" Receptacle (Upstream Input to the USB Device)
- Cable Side : Series "B" Plug

2) Cable

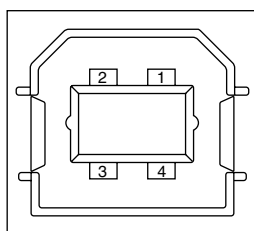
- Cable Length : Max 5m (A cable must be met USB Spec Rev 1.1 for normal operation)

Note: Cable is not provided.

3) Table of USB I / F signals

Contact Number	Signal Name
1	Vbus
2	D -
3	D +
4	GND
Shell	Shield

4) Connector pin arrangement



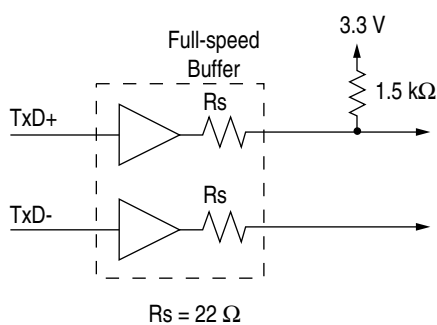
5) Mode & Class of Device

- Full - speed Driver
- Self - powered Device

6) Data Signaling Rate

- Full - speed function - 12Mb/s

7) Interface circuit



8) Signal Level

• Input / Output Level

Parameter	Symbol	Min.	Max.	Units
Input Levels :				
High (driven)	V _{IH}	2.0		V
High (floating)	V _{IHZ}	2.7	3.6	V
Low	V _{IL}		0.8	V
Output Levels :				
Low	OL	0.0	0.3	V
High (driven)	OH	2.8	3.6	V
Output Signal Crossover Voltage	VC _{RS}	1.3	2.0	V

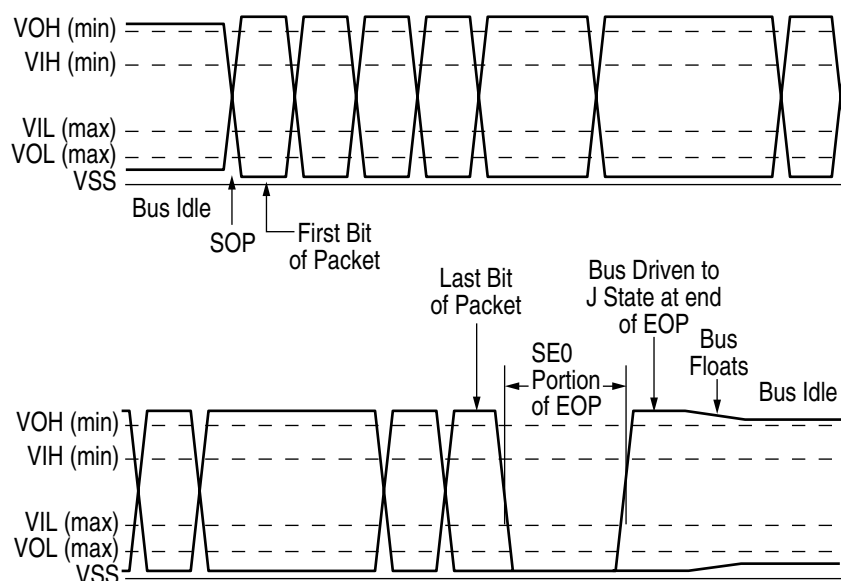
• Signaling Levels

Bus State	Signaling Levels	
	Required	Acceptable
Differential "1"	(D+) - (D-) > 200mV and D+ > V _{IH} (min)	(D+) - (D-) > 200mV
Differential "0"	(D-) - (D+) > 200mV and D- > V _{IH} (min)	(D-) - (D+) > 200mV
Single-ended 0 (SE0)	D+ and D- < V _{IL} (max)	D+ and D- < V _{IH} (min)
Data J state:		
Low-speed	Differential "0"	
Full-speed	Differential "1"	
Data K state:		
Low-speed	Differential "1"	
Full-speed	Differential "0"	
Idle state:		
Low-speed	D- > V _{IHZ} (min) and D+ < V _{IL} (max)	D- > V _{IHZ} (min) and D+ < V _{IH} (min)
Full-speed	D+ > V _{IHZ} (min) and D- < V _{IL} (max)	D+ > V _{IHZ} (min) and D- < V _{IH} (min)
Resume state	Data K state	
Start-of-Packet (SOP)	Data lines switch from Idle to K state	
End-of-Packet (EOP)	SE0 for ≥ 1 bit time ¹ followed by a J state for 1 bit time	SE0 for ≥ 1 bit time ¹ followed by a J state
Disconnect (at downstream port)	SE0 for ≥ 2.5μs	
Connect (at downstream port)	Idle for ≥ 2ms	Idle for ≥ 2.5μs
Reset	D+ and D- < V _{IL} (max) for ≥ 10ms	D+ and D- < V _{IL} (max) for ≥ 2.5μs

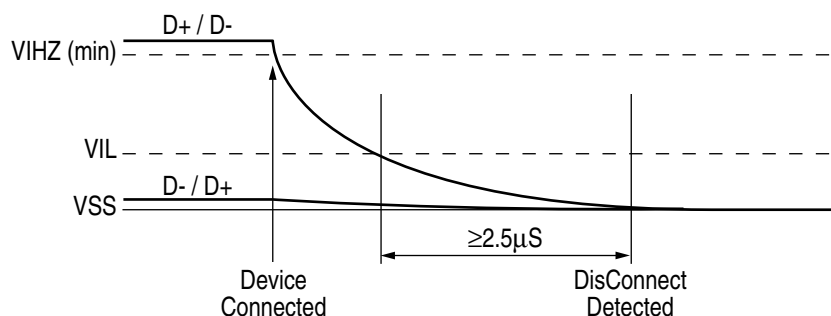
Note: The width of EOP is defined in bit times relative to the device type receiving the EOP. The bit time is approximate.

9) Timing Chart

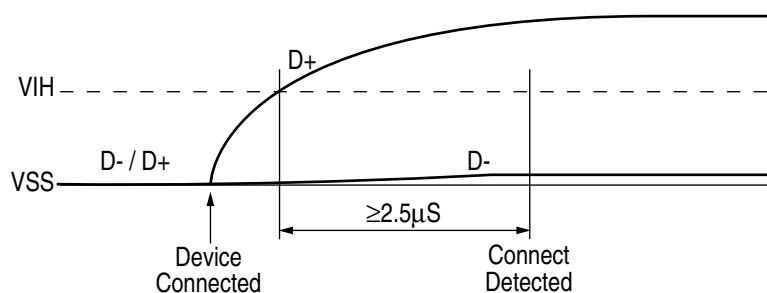
a) Packet Voltage Levels



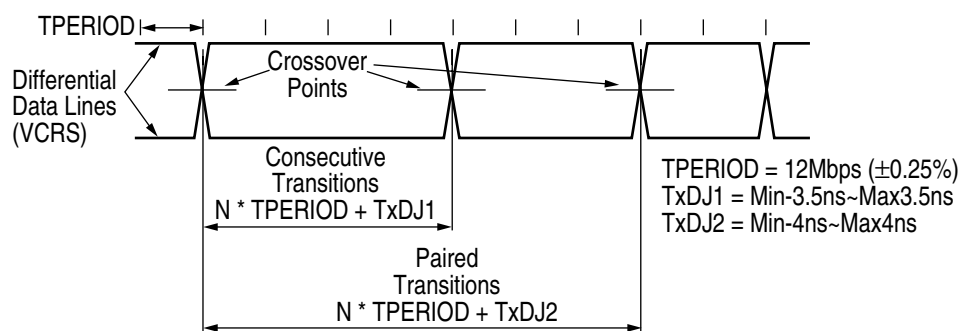
b) Disconnect Detection



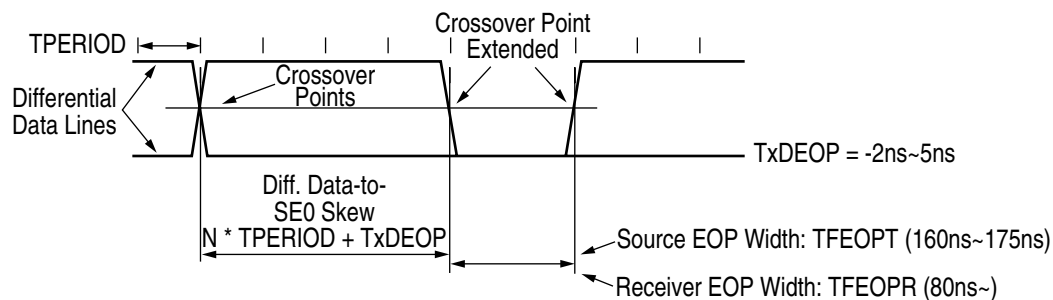
c) Full-speed Device Connect Detection



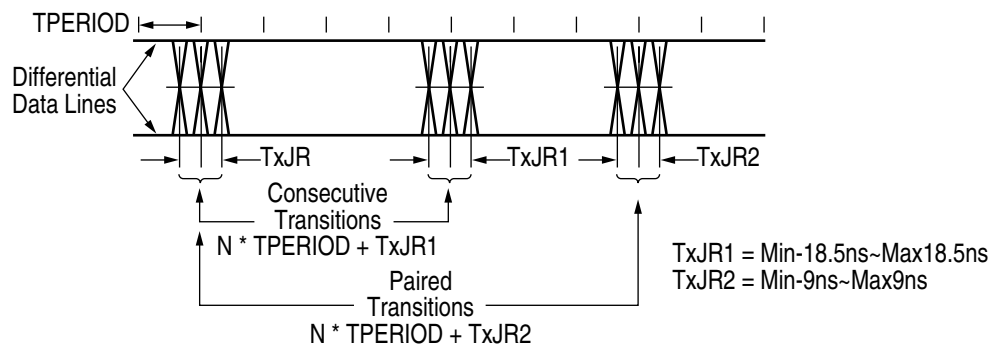
d) Differential Data Jitter



e) Differential-to-EOP Transition Skew and EOP Width



f) Receiver Jitter Tolerance



APPENDIX D MULTI PURPOSE FEEDER MAINTENANCE

1. OUTLINE

1.1 Functions

This Multi-Purpose Feeder is installed on the front section of the printer, and it supplies paper automatically through the operation of pulse motor, which is driven by signals sent from the printer. The main functions are the followings:

- Paper that can be used:

[Paper Types]

- Standard paper: Xerox 4200 (20-lb)
- Special paper: OHP sheets (for PPC), label sheets (PPC sheets)
* Not guaranteed for OHP sheets with attachments on the edge or reverse side.
- Cut sheet size: Letter, Executive, A4, A5, B5, A6, COM9, COM10, Monarch, DL, C5
- Special size: Width: 87 to 216mm
Length: 148 to 297mm

[Weight and Thickness]

- 16-lb to 32-lb (60~128 g/m²)
- For labels and OHP Sheets: Label sheets: 0.1 to 0.15mm
OHP sheets: 0.08 to 0.11mm

* When using sheets which exceed 24-lb, make sure that the paper exits through the face-up route.

1.2 External View and Component Names

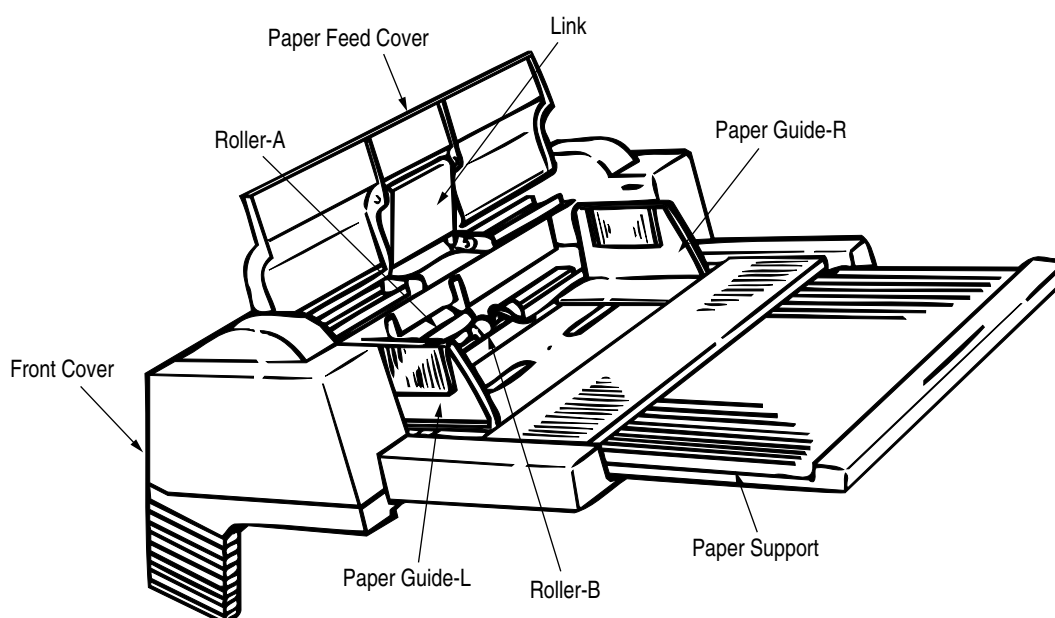


Figure 1-1

2. MECHANISM DESCRIPTION

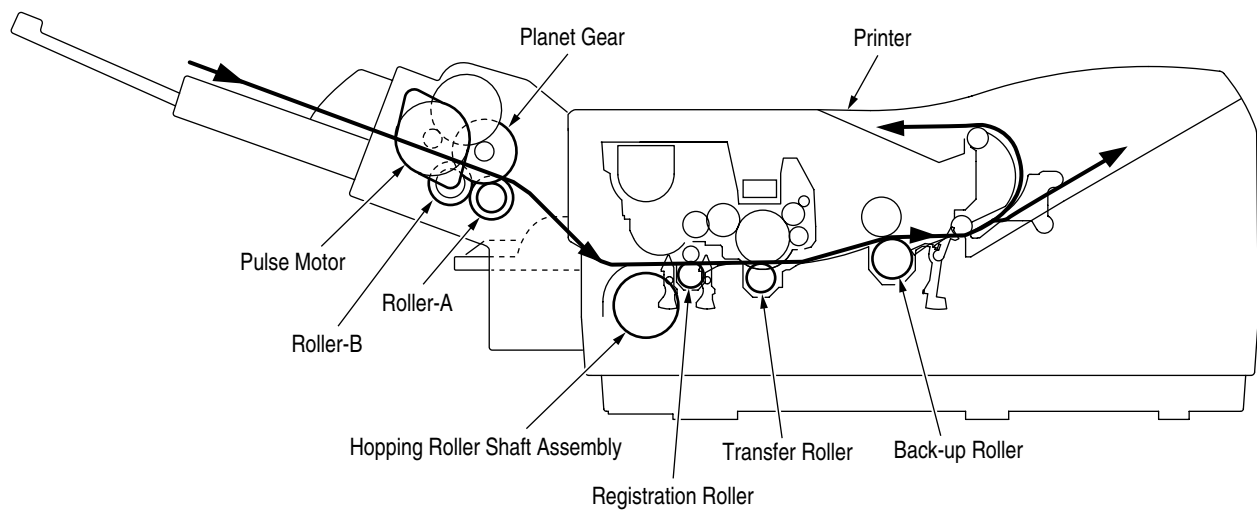
2.1 General Mechanism

The Multi-Purpose Feeder feeds the envelopes and paper into the printer by receiving the signal from the printer, which drives the pulse motor inside the Multi-Purpose Feeder, and this motion is transmitted to rotate roller-A and B. The envelope or paper is delivered from the separator into the printer.

Once delivered into the printer, the envelope or paper is then controlled and fed through by pulse motor (registration) of the printer.

2.2 Hopper Mechanism

The hopper automatically feeds the printer with the envelope or paper being set, one sheet at a time. After the envelope or paper is set in the Multi-Purpose Feeder, the pulse motor moves the envelope or paper and a single envelope or paper caught by the separator is fed into the printer.



3. PARTS REPLACEMENT

This section covers the procedures for the disassembly, reassembly and installations in the field. This section describes the disassembly procedures, and for reassembly procedures, basically proceed with the disassembly procedures in the reverse order.

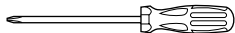
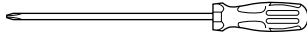


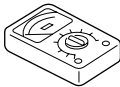
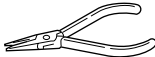
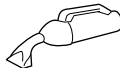
3.1 Precautions Concerning Parts Replacement

- (1) Parts replacements must be carried out, by first turning the printer power switch off "O" and removing the Multi-Purpose Feeder from the printer.
- (2) Do not disassemble the Multi-Purpose Feeder if it is operating normally.
- (3) Establish the extent of disassembly suitable for the purpose of the procedure, and do not disassemble any more than necessary.
- (4) Only specified service tools may be used.
- (5) Disassembly must be carried out according to the prescribed procedures. Parts may be damaged if such procedures are not followed.
- (6) Small parts such as screws and collars can easily be lost, therefore these parts should be temporarily fixed in the original location.
- (7) When handling printed circuit boards, do not use any glove which may generate static electricity.
- (8) Do not place the printed circuit boards directly on the equipment or floor.

[Service Tools]

Table 3-1 shows the tools required for the replacement of printed circuit boards, assemblies and units in the field.

Table 3-1 Service Tools

No.	Service Tools	Q'ty	Application	Remarks
1	 No. 1-100 Philips screwdriver	1	2 ~ 2.5 mm screws	
2	 No. 2-100 Philips screwdriver	1	3 ~ 5 mm screws	
3	 No. 3-100 screwdriver	1		
4	 No. 5-200 screwdriver	1		
5	 Digital multimeter	1		
6	 Pliers	1		
7	 Handy cleaner	1		Refer to the following note.

Note! Use a vacuum cleaner dealing with toner. Using a common vacuum cleaner may cause fire.

3.2 Parts Layout

This section describes the layout of the main components.

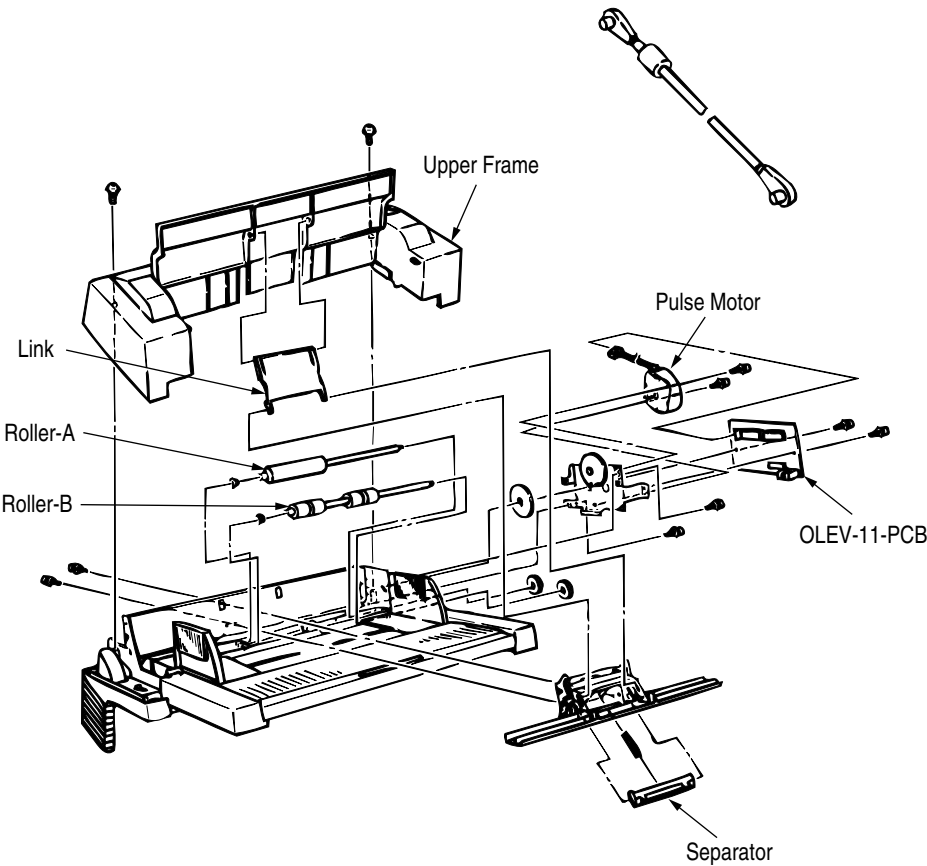
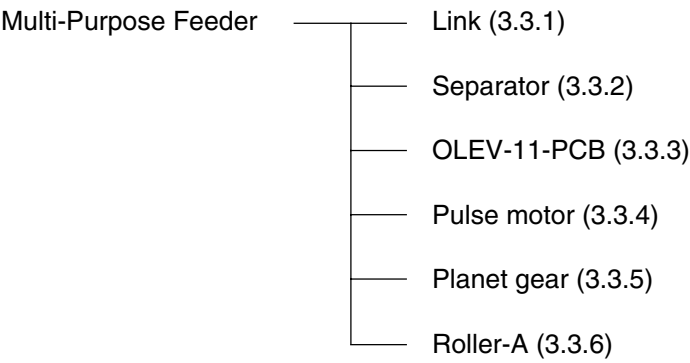


Figure 3-1

3.3 Parts Replacement Methods

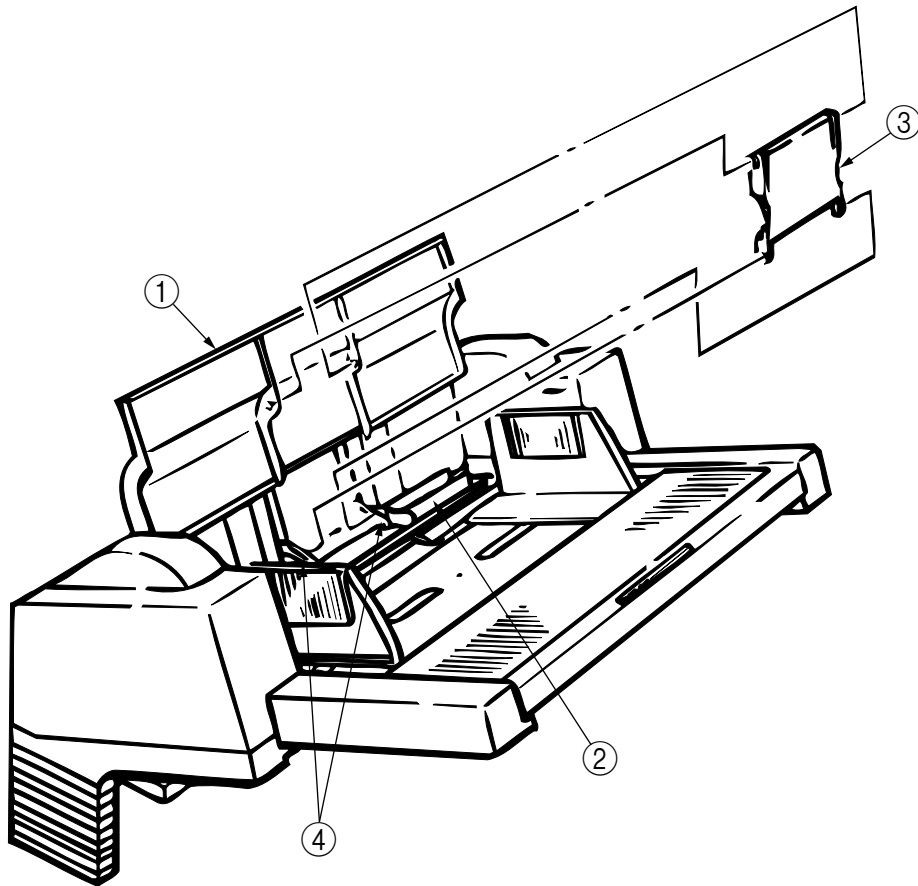
This section describes the parts replacement methods for the components listed in the disassembly order diagram below.



3.3.1 Link

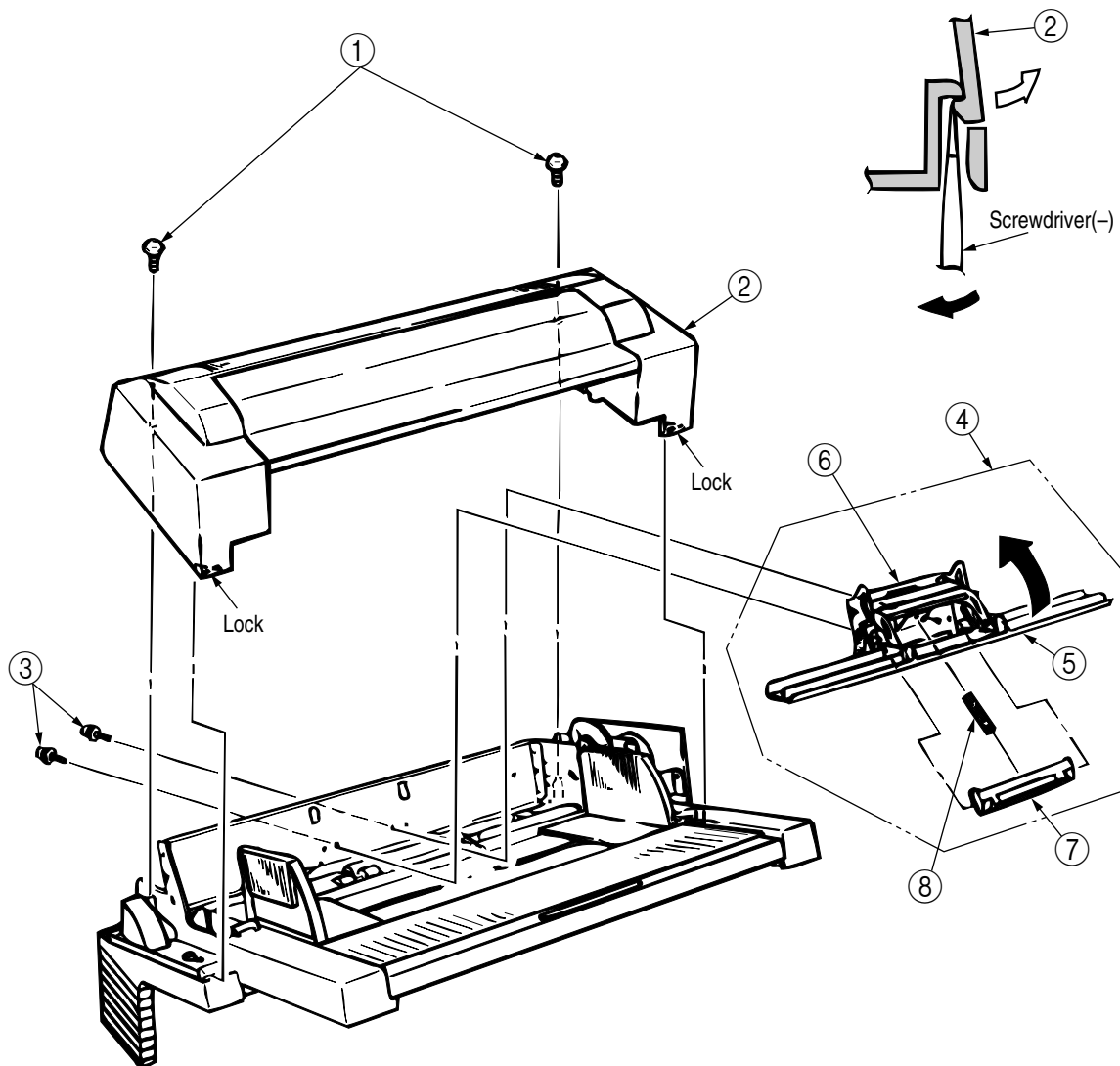
- (1) Open paper feed cover ①, and disengage the paper feed cover ① and link ③, while lifting the paper hold ②.
- (2) Remove the paper hold ② off the arm ④.
- (3) Disengage the link ③ from the arm ④, and remove it.

* Be careful not to deform the link and arm.



3.3.2 Separator

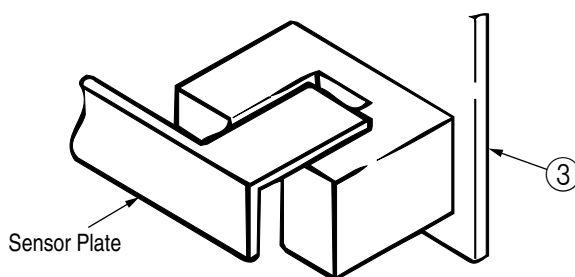
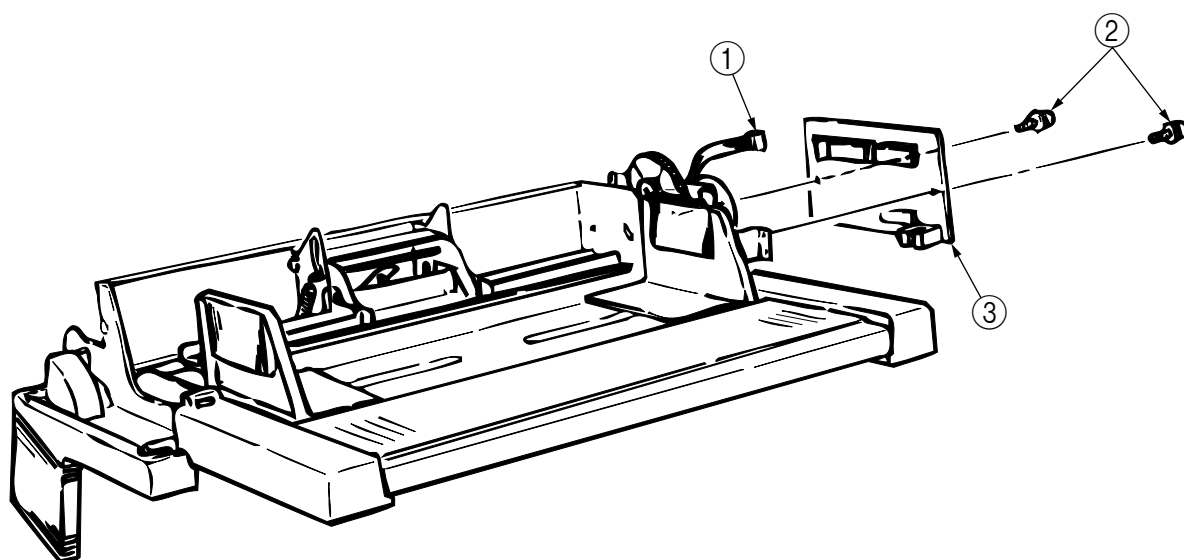
- (1) Turn the power switch off "O" and remove the connector cable.
- (2) Disengage the link and paper feeder cover (see 3.3.1).
- (3) Remove 2 screws ①, disengage the locks at 2 locations on the upper frame ② with a screwdriver, and remove the upper frame ②.
- (4) Remove 2 screws ③, and take out the separator assembly ④.
- (5) Disengage the separator ⑦ from the separator bracket ⑥ while lifting the paper hold ⑤, and take out the separator (be careful not to lose the spring ⑧ when you are doing this).



3.3.3 OLEV-11-PCB

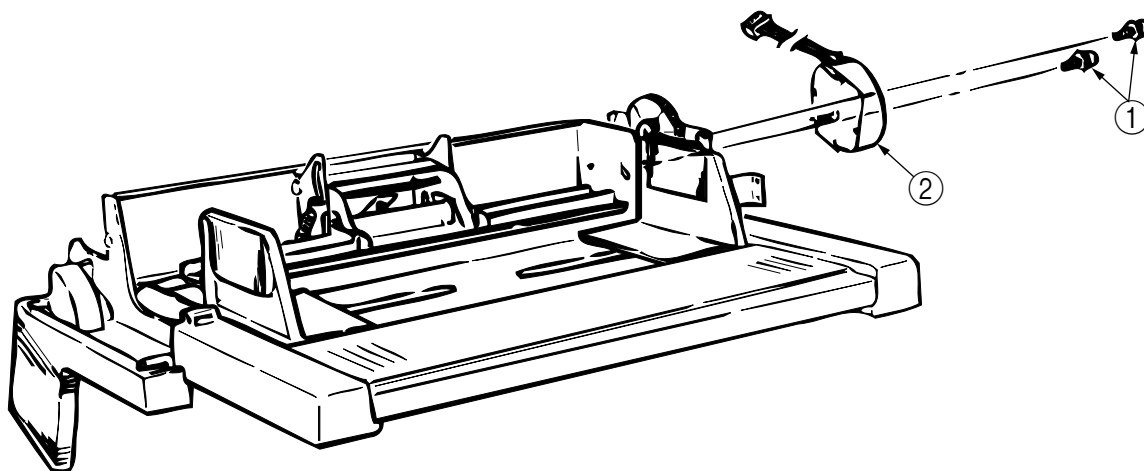
- (1) Remove the upper frame [see 3.3.2 steps (1) through (3)].
- (2) Remove the connector ①.
- (3) Remove 2 screws ②, and remove the OLEV-11 PCB ③.

When reinstalling the printed circuit board, be careful to make sure that the sensor plate is being set correctly.



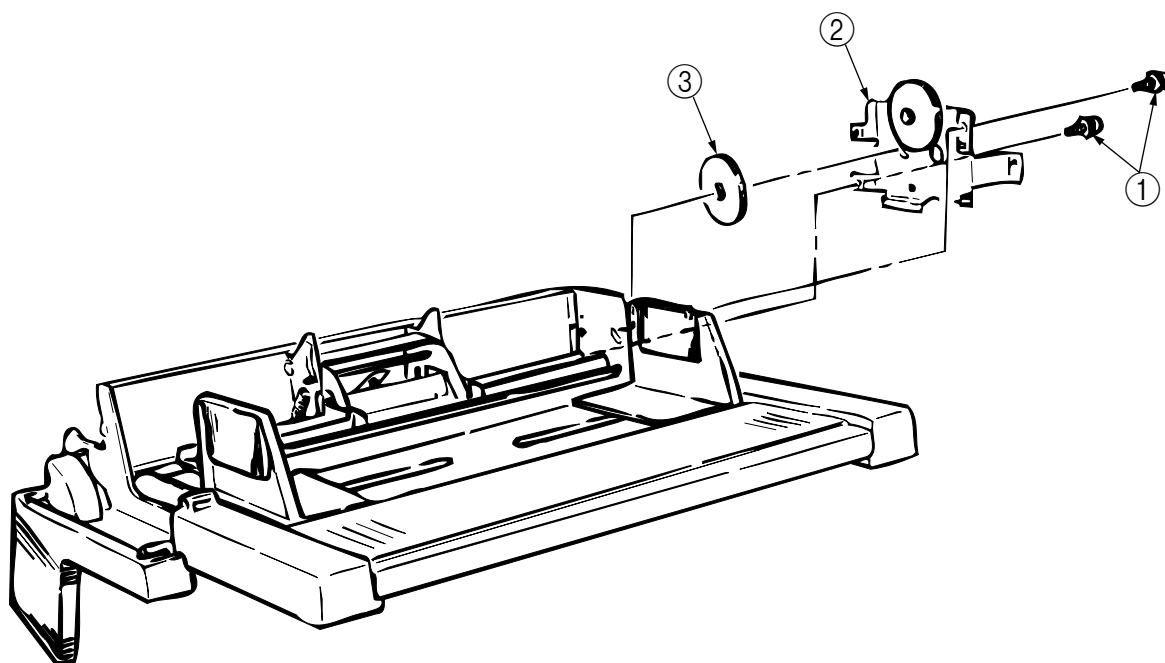
3.3.4 Pulse Motor

- (1) Remove the upper frame [see 3.3.2 steps (1) through (3)].
- (2) Remove the OLEV-11-PCB (see 3.3.3).
- (3) Remove 2 screws ①, and remove the pulse motor ②.



3.3.5 Planet Gear

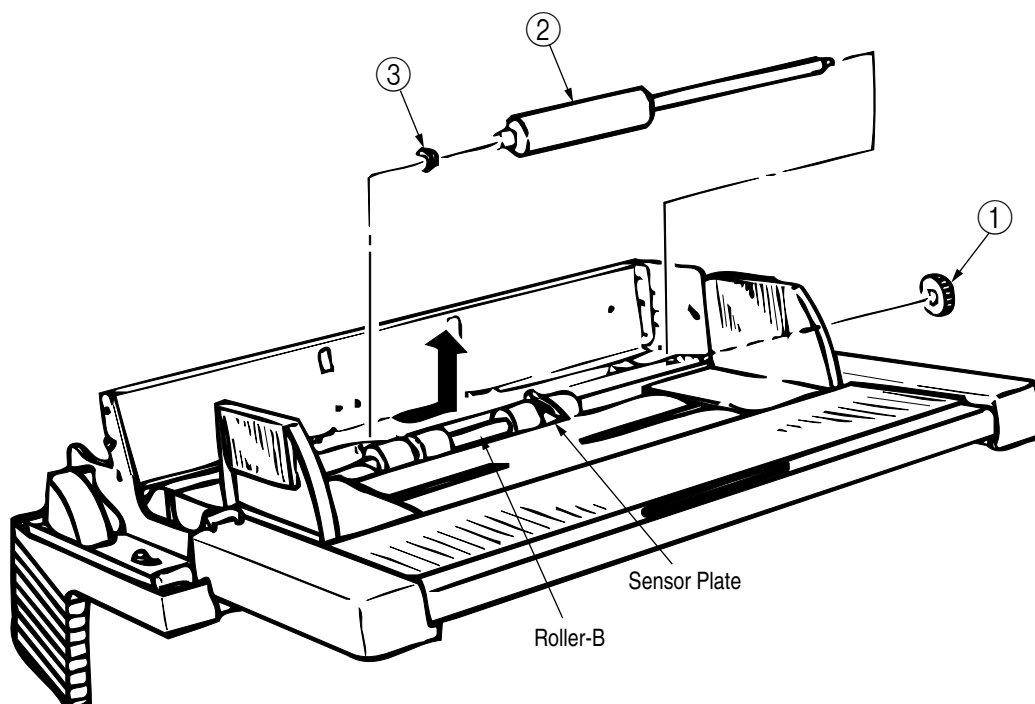
- (1) Remove the upper frame [see 3.3.2 steps (1) through (3)].
- (2) Remove the OLEV-11-PCB (see 3.3.3).
- (3) Remove 2 screws ①, and remove the motor bracket assembly ② and planet gear ③.



3.3.6 Roller-A and B

While only the removal procedure for roller-A is described here, the removal procedure for roller-B is basically same. When removing roller-B, however, be careful not to deform the sensor plate.

- (1) Remove the upper frame [see 3.3.2 steps (1) through (3)].
- (2) Remove the separator assembly (see 3.3.2).
- (3) Remove the OLEV-11-PCB (see 3.3.3).
- (4) Remove the motor bracket (see 3.3.5).
- (5) Remove the gear ①.
- (6) Shift the roller-A ② to the right, lift it on its left side and slide it out (the bearing ③ also comes off while you are doing this, so be careful not to lose it).



4. TROUBLESHOOTING

4.1 Precautions Prior to the Troubleshooting

- (1) Go through the basic checking items provided in the Printer Handbook.
- (2) Obtain detailed information concerning the problem from the user.
- (3) Go through checking in the conditions similar to that in which the problem occurred.

4.2 Preparations for the Troubleshooting

- (1) Display on the operator panel
The status of the problem is displayed on the LED on the operator panel.

[For ODA]

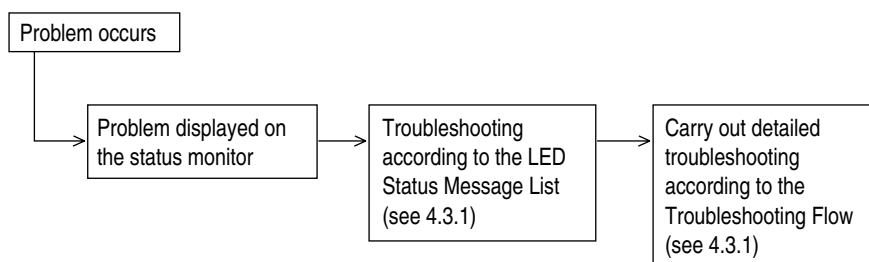


[For OEL/INT]



4.3 Troubleshooting Method




When a problem occurs, go through the troubleshooting according to the following procedure.



4.3.1 LCD Status Message List

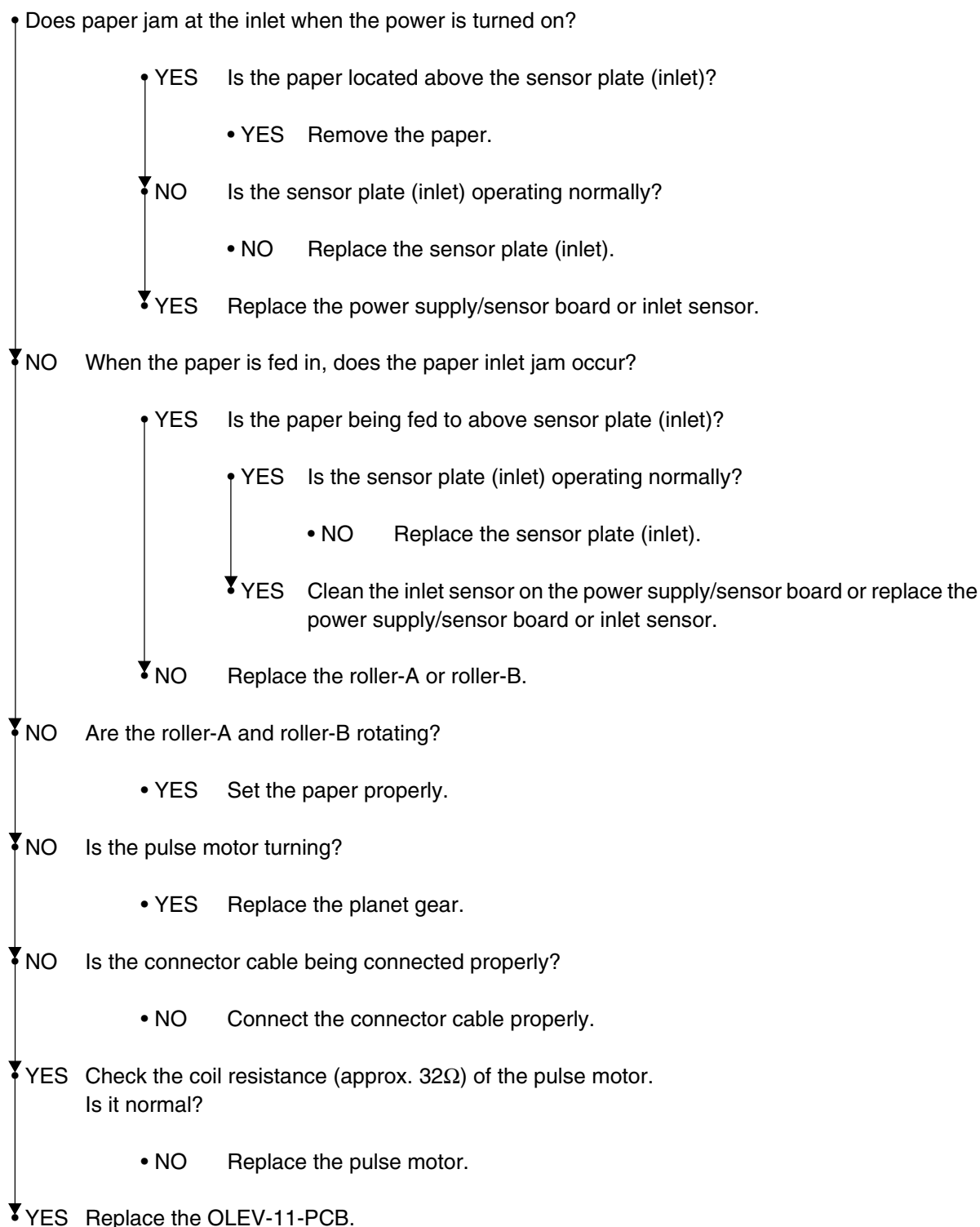
The listing of the statuses and problems displayed in the form of messages on the LCD is provided in Table 4-1.

Table 4-1

Classification	LED Status Message	Description	Recovery method
Jam error	 Blinking OFF OFF	Notifies of occurrence of jam while the paper is being fed from Multi-Purpose Feeder.	<ul style="list-style-type: none"> Check the paper in the Multi-Purpose Feeder. Carry out the recovery printing by opening and closing the cover, and turn the error display off. When the problem occurs frequently, go through the Troubleshooting.
Paper size error	 Blinking OFF OFF	Notifies of incorrect size paper feeding from Multi-Purpose Feeder.	<ul style="list-style-type: none"> Check the paper in the Multi-Purpose Feeder. Also check to see if there was a feeding of multiple sheets. Carry out the recovery printing by opening and closing the cover, and turn the error display off.
Tray paper out	 Blinking OFF OFF	Notifies of no paper state of the Multi-Purpose Feeder.	<ul style="list-style-type: none"> Load the paper in Multi-Purpose Feeder.

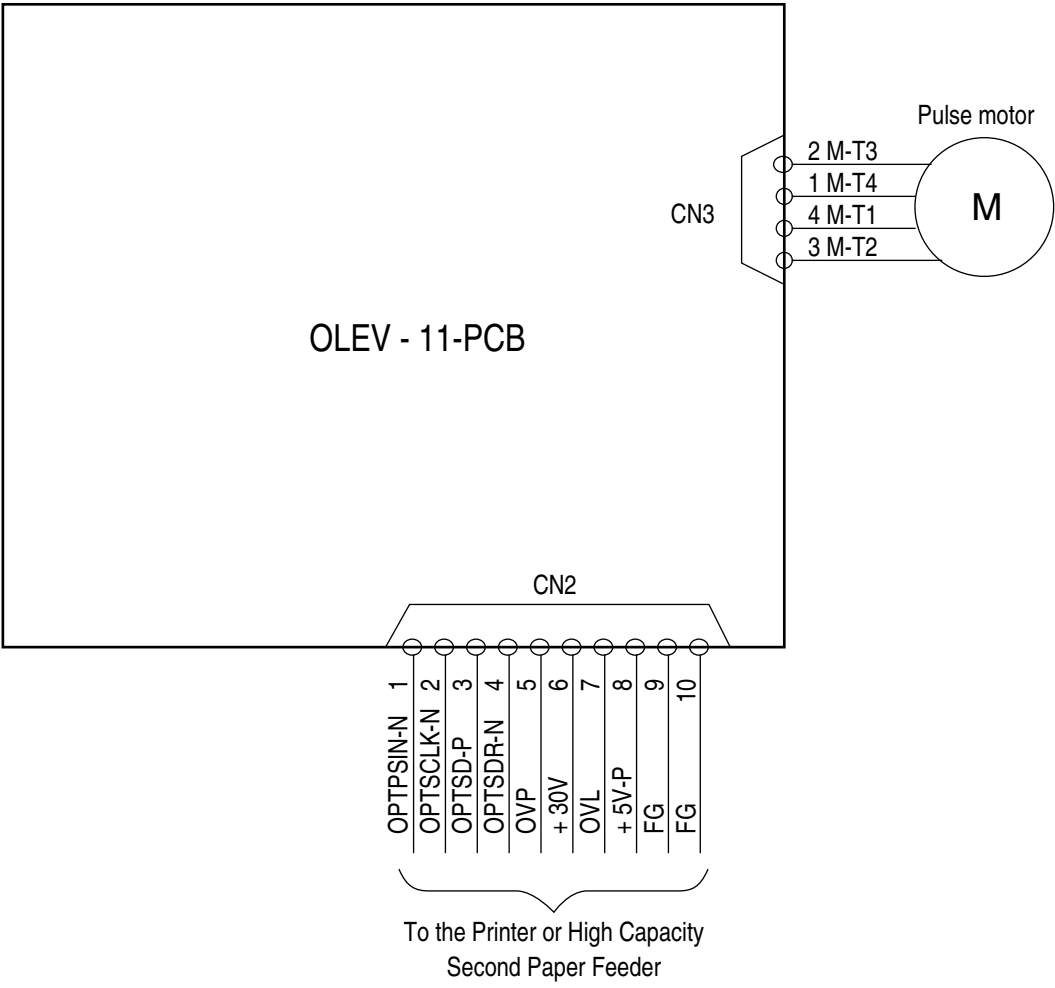
- (JAM error)

Paper Inlet Jam



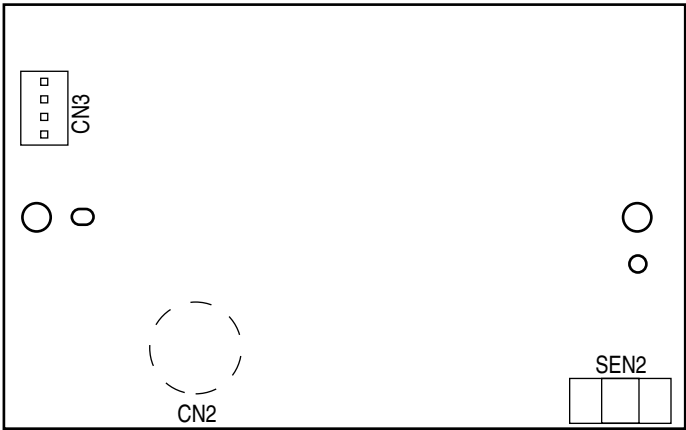
5. CONNECTION DIAGRAM

5.1 Interconnection Diagram



5.2 PCB Layout

OLEV-11-PCB



APPENDIX E HIGH CAPACITY SECOND PAPER FEEDER

1. OUTLINE

1.1 Functions

The printer is mounted on top of this High Capacity Second Paper Feeder. The High Capacity Second Paper Feeder supplies paper automatically through the operation of pulse motor (hopping), which is driven by signals sent from the printer.

The main functions are the followings:

- Paper that can be used:

[Paper Type]

- Standard paper: Xerox 4200 (20-lb)
- Special paper: OHP sheets (for PPC), Label sheets (PPC sheets); use of envelopes or thick paper is not possible.
- Cut sheet size: A4, A5, B5, Letter, Executive, Legal13, Legal14
- Special size: Paper width: 148 to 216mm
Paper length: 210 to 355.6mm

[Weight]

- 16-lb to 24-lb (60 to 90 g/m²)
- Paper setting quantity: 500 sheets of paper weighing 64 g/m²

1.2 External View and Component Names

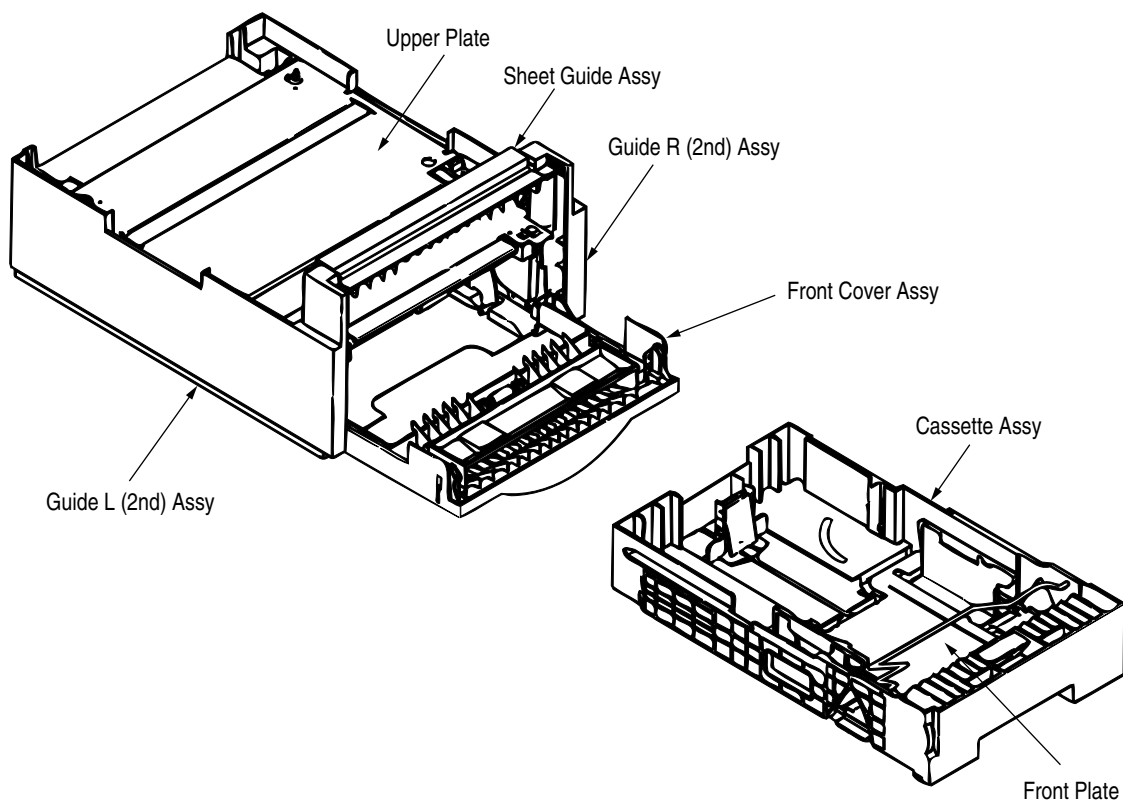


Figure 1-1 External View and Component Names

2. MECHANISM DESCRIPTION

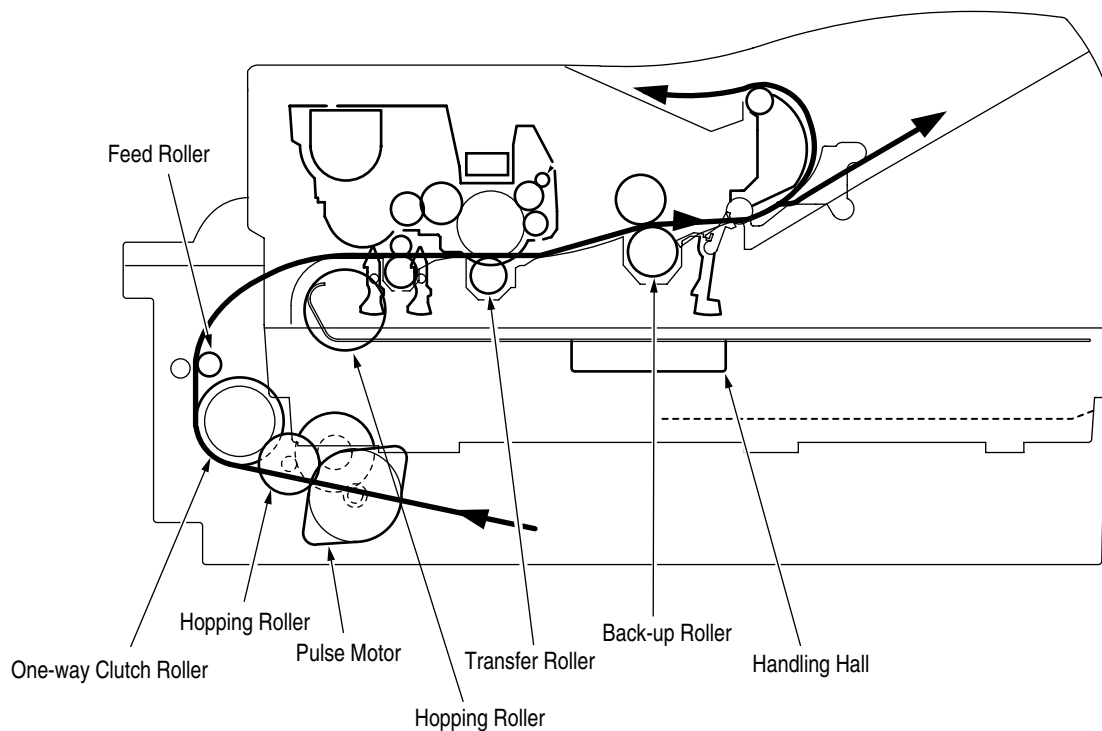
2.1 General Mechanism

The High Capacity Second Paper Feeder feeds the paper into the printer by receiving the signal from the printer, which drives the pulse motor inside the High Capacity Second Paper Feeder, and this motion is transmitted to rotate the one-way clutch of the hopping frame assembly. The paper is delivered from the hopper into the printer through the turning of the hopping roller and feed roller.

Once delivered into the printer, the paper is then controlled and fed through by pulse motor (registration) of the printer.

2.2 Hopper Mechanism

The hopper automatically feeds the printer with the paper being set, single sheet at a time. When the paper is loaded in the paper cassette, it is then transported by the pulse motor, carrying forward only a single sheet caught by the brake shoe at a time.



3. PARTS REPLACEMENT

This section covers the procedures for the disassembly, reassembly and installations in the field. This section describes the disassembly procedures, and for reassembly procedures, basically proceed with the disassembly procedures in the reverse order.

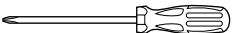



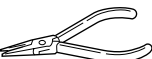
3.1 Precautions Concerning Parts Replacement

- (1) Parts replacements must be carried out, by first turning the printer power switch off "O" and removing the printer from the High Capacity Second Paper Feeder.
- (2) Do not disassemble the High Capacity Paper Feeder if it is operating normally.
- (3) Establish the extent of disassembly suitable for the purpose of the procedure, and do not disassemble any more than necessary.
- (4) Only specified service tools may be used.
- (5) Disassembly must be carried out according to the prescribed procedures. Parts may be damaged if such procedures are not followed.
- (6) Small parts such as screws and collars can easily be lost, therefore these parts should be temporarily fixed in the original location.
- (7) When handling printed circuit boards, do not use any glove which may generate static electricity.
- (8) Do not place the printed circuit boards directly on the equipment or floor.

[Service Tools]

Table 3-1 shows the tools required for the replacement of printed circuit boards, assemblies and units in the field.

Table 3-1 Service Tools

No.	Service Tools	Q'ty	Application	Remarks
1	 No. 1-100 Philips screwdriver	1	2 ~ 2.5 mm screws	
2	 No. 2-100 Philips screwdriver	1	3 ~ 5 mm screws	
3	 No. 3-100 screwdriver	1		
4	 Digital multimeter	1		
5	 Pliers	1		

3.2 Parts Layout

This section describes the layout of the main components.

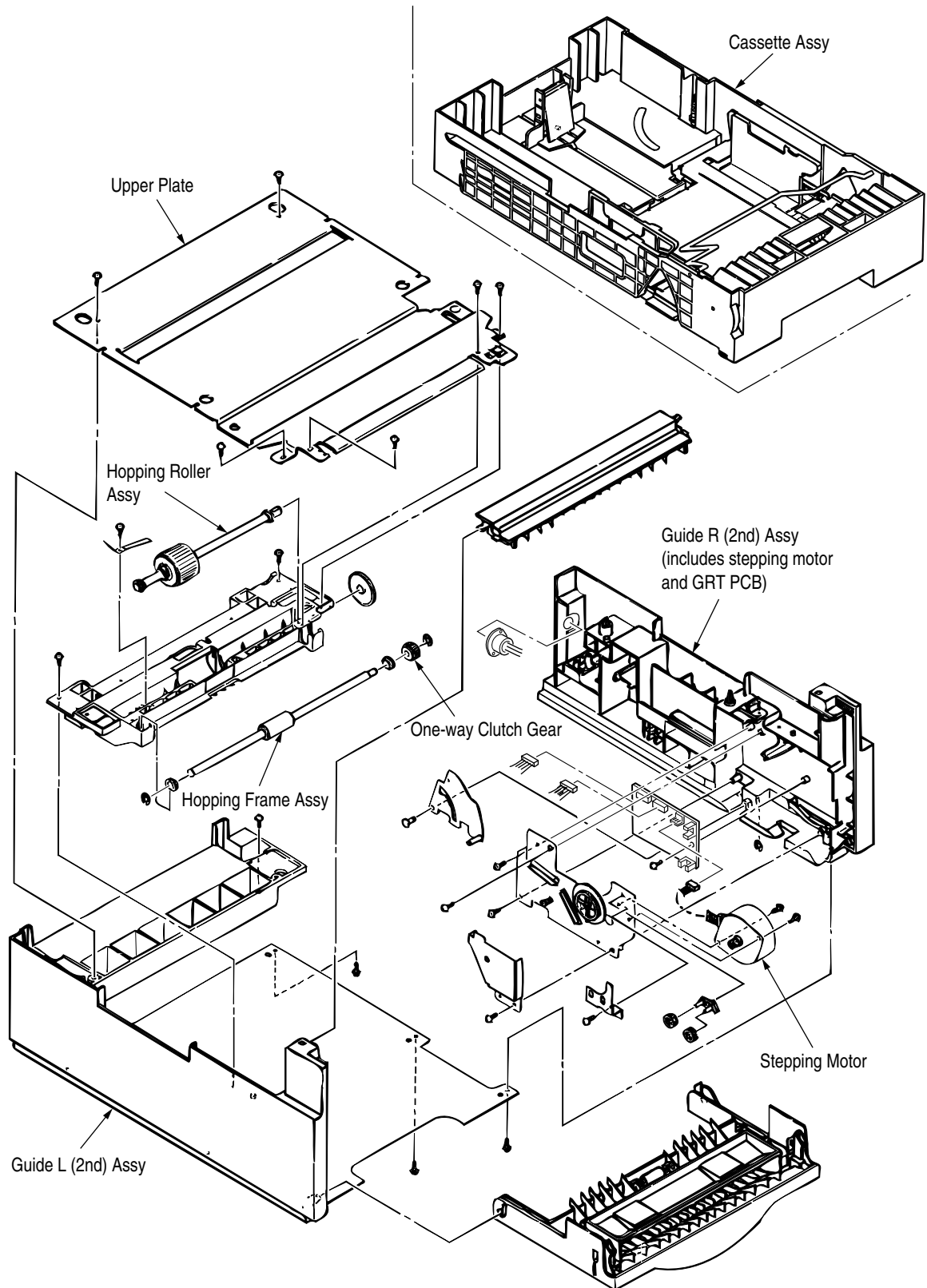
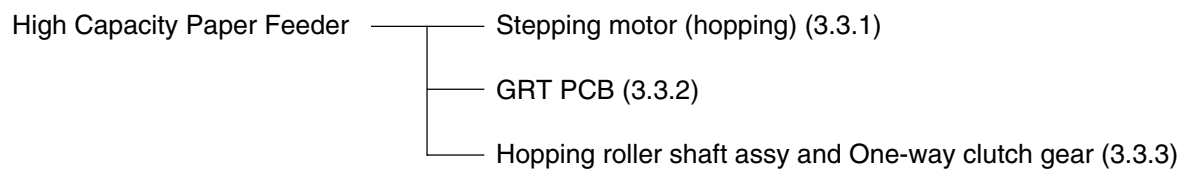


Figure 3-1

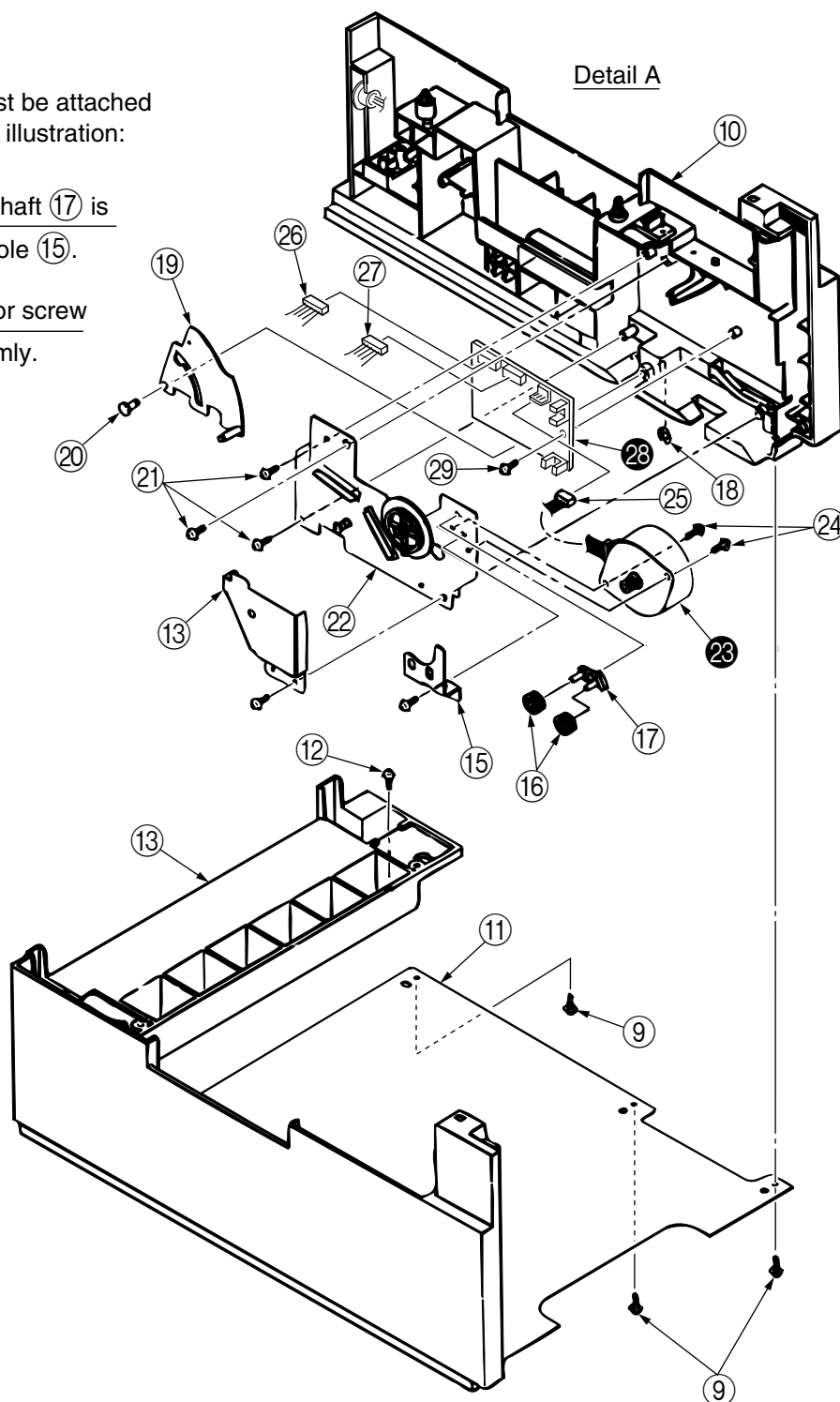
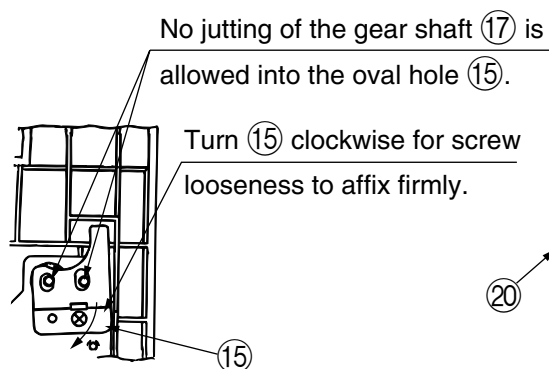
3.3 Parts Replacement Methods

This section describes the parts replacement methods for the components listed in the disassembly order diagram below.

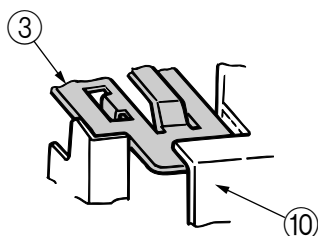


- (6) Remove three screws ⑨ which are holding the guide R (2nd) assy ⑩ to the bottom plate ⑪. Remove the screw ⑫ which is keeping the rear cover ⑬ and guide R (2nd) assy ⑩. Remove the guide R (2nd) assy ⑩.
- (7) Remove the protect (M) ⑭, guide bracket ⑮, planet gears ⑯ and planet gear bracket ⑰.
- (8) Remove the E-ring ⑱ which is keeping the sheet link ⑲ on the guide R (2nd) assy ⑩, and pull out the hinge stand ⑳.
- (9) Remove three remaining screws ㉑ which are keeping the motor on the motor bracket ㉒, and remove the connector off the Stepping Motor ㉓.
- (10) Remove two screws ㉔ on the Stepping Motor ㉓.

Note : The guide bracket ⑮ must be attached as shown in the following illustration:



The upper plate ③ must be attached as shown in the following illustration.



3.3.2 TQSB-2 PCB

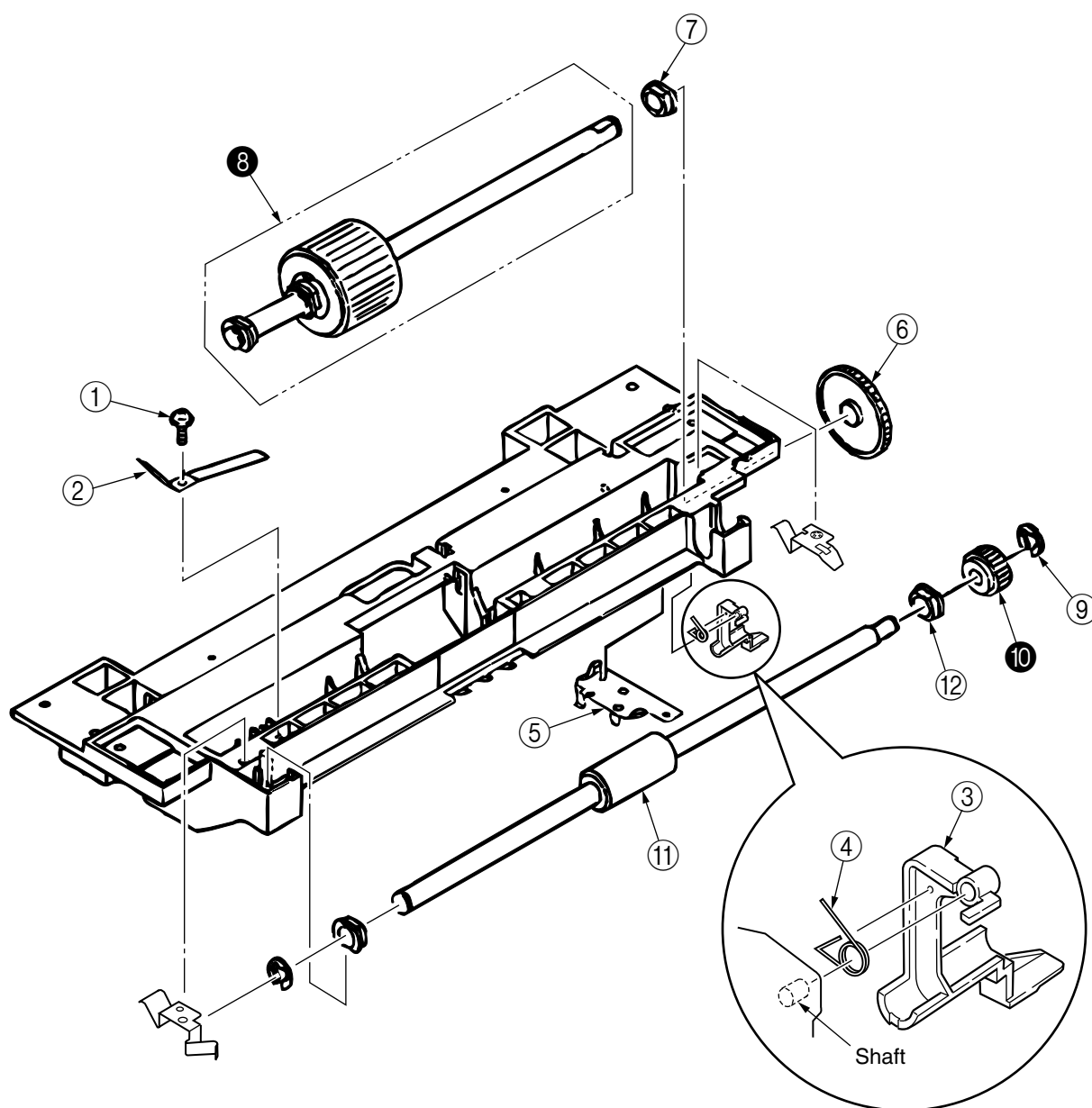
- (1) Remove the pulse motor (see 3.3.1).
- (2) Remove the connectors 26, 27 from the GRT PCB 28.
- (3) Remove the screw 29 and remove the GRT PCB 28.

Note : Refer to Detail A in the previous page.

3.3.3 Hopping Roller Shaft Assy and One-way Clutch Gear

- (1) Follow up to step (3) of 3.3.1 and remove the hopping frame assy.
- (2) Remove the screw ① and remove the earth plate ②. Remove the sensor lever (T) ③ and remove the transition spring ④ and remove the ground plate ⑤. Remove the gear ⑥ and remove the metal bush ⑦ and hopping roller shaft assy ⑧.
- (3) Remove the E-ring ⑨ and remove the one-way clutch gear ⑩ on the right side of the feed roller ⑪.

Note : The metal bush ⑫ also comes off. Be careful not to lose it.



The tension lever and the sensor lever need concurrent replacing.

4. TROUBLESHOOTING

4.1 Precautions Prior to the Troubleshooting

- (1) Go through the basic checking items provided in the Printer Handbook.
- (2) Obtain detailed information concerning the problem from the user.
- (3) Go through checking in the conditions similar to that in which the problem occurred.

4.2 Preparations for the Troubleshooting

- (1) Display on the Operator panel
The status of the problem is displayed on the LED on the Operator panel.

[For ODA]

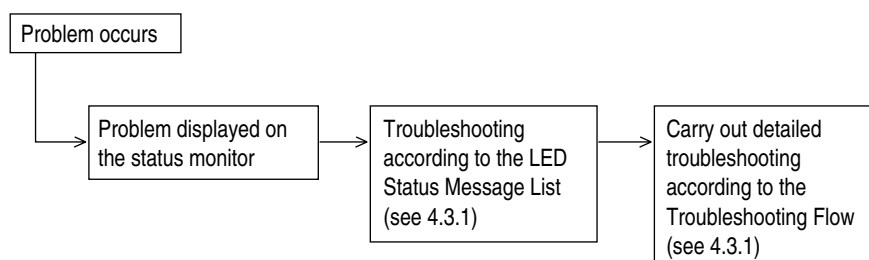


[For OEL/INT]



4.3 Troubleshooting Method






When a problem occurs, go through the troubleshooting according to the following procedure.



4.3.1 LED Status Message List

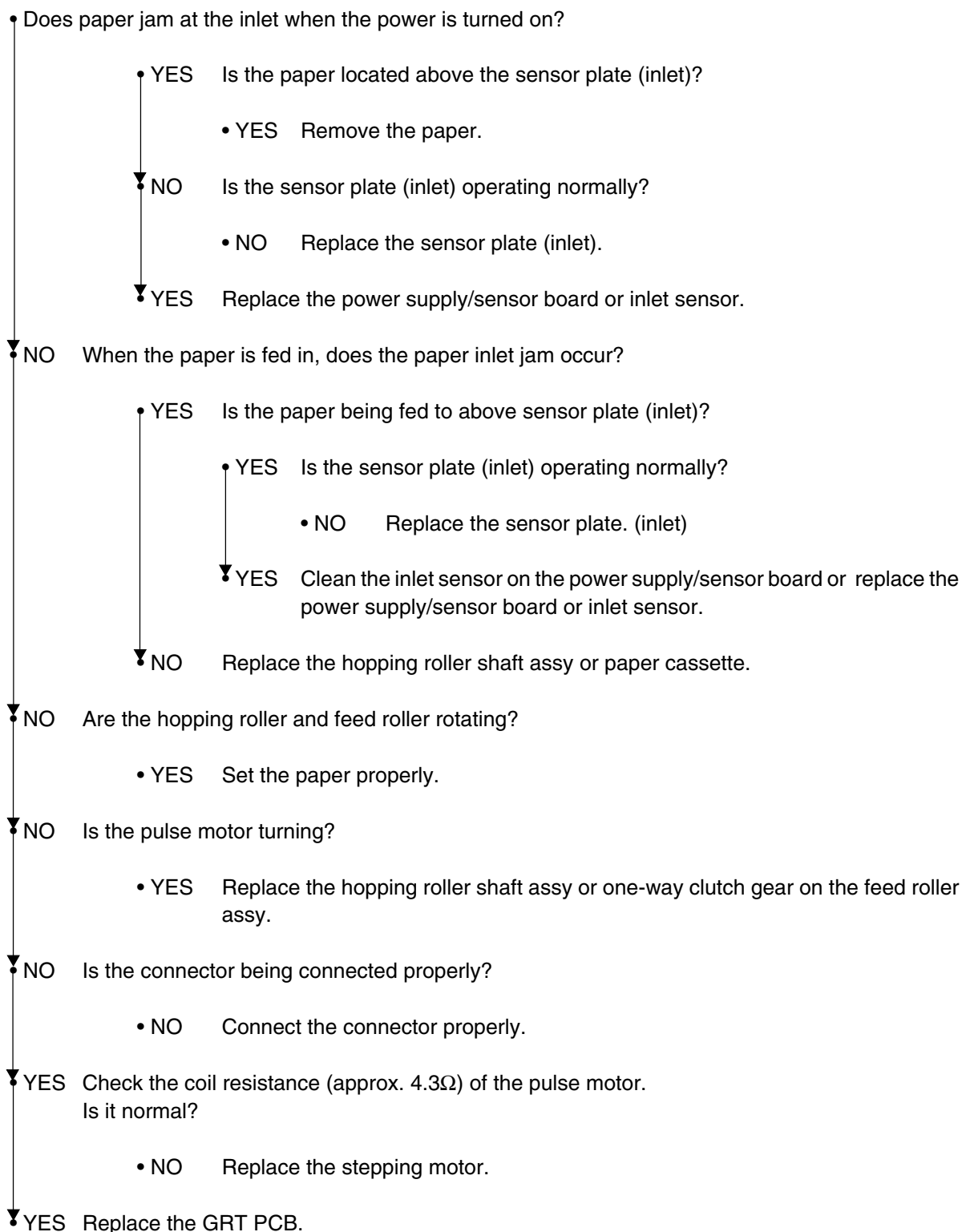
The listing of the statuses and problems displayed in the form of messages on the status monitor is provided in Table 4-1.

Table 4-1

Classification	LED Status Message	Description	Recovery method
Jam error (feeding)		Notifies of occurrence of jam while the paper is being fed from High Capacity Second Paper Feeder.	<ul style="list-style-type: none"> Check the paper in the High Capacity Second Paper Feeder. Carry out the recovery printing by opening and closing the cover, and turn the error display off. When the problem occurs frequently, go through the Troubleshooting.
Jam error (ejection)		Notifies of occurrence of jam while the paper is being ejected from the printer.	<ul style="list-style-type: none"> Check the paper in the printer. Carry out the recovery printing by opening and closing the cover, and turn the error display off.
Paper size error		Notifies of incorrect size paper feeding from High Capacity Second Paper Feeder.	<ul style="list-style-type: none"> Check the paper in the High Capacity Second Paper Feeder. Also check to see if there was a feeding of multiple sheets. Carry out the recovery printing by opening and closing the cover, and turn the error display off.
Tray paper out		Notifies of no paper state of the High Capacity Second Paper feeder.	<ul style="list-style-type: none"> Load the paper in High Capacity Second Paper Feeder.
Paper size request		Notifies of correct paper size for the High capacity Second Paper Feeder.	<ul style="list-style-type: none"> Load the requested size paper in the High Capacity Second Paper Feeder.

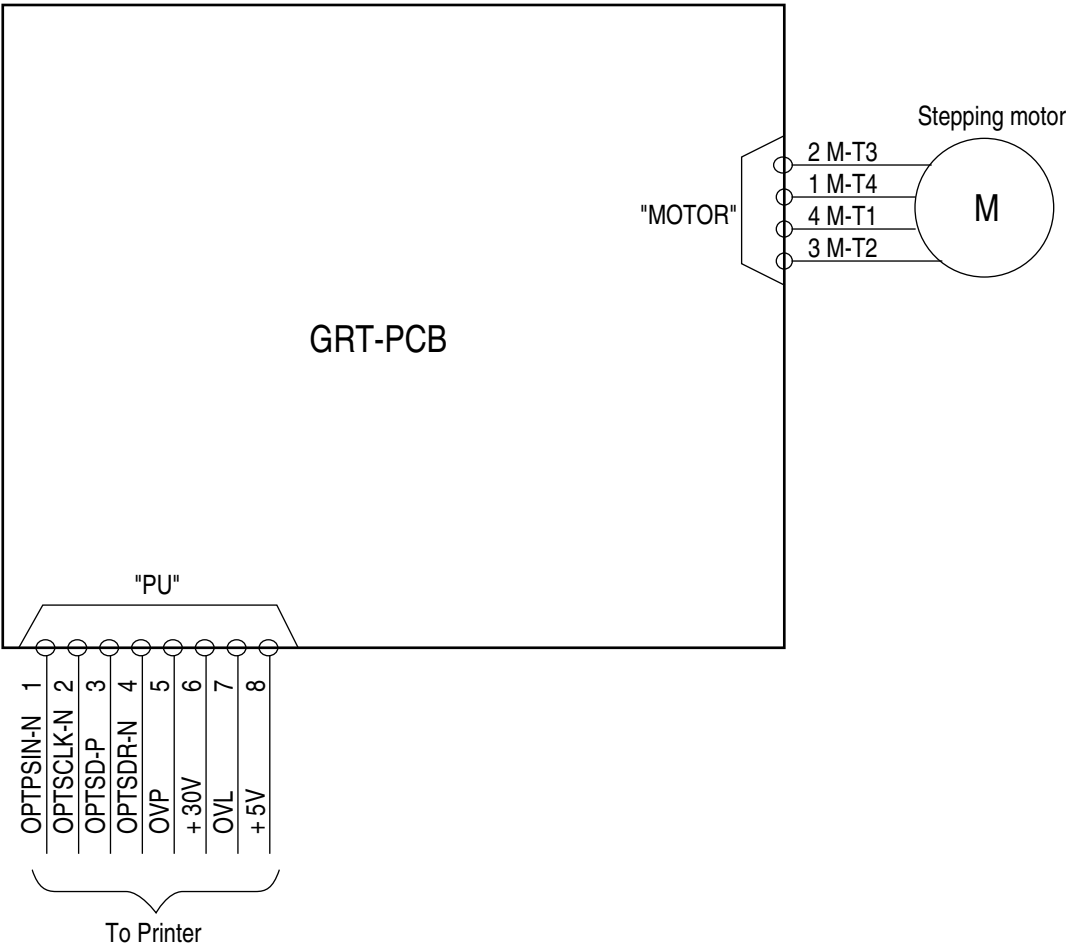
- (JAM error)

Paper Inlet Jam



5. CONNECTION DIAGRAM

5.1 Interconnection Diagram



5.2 PCB Layout

GRT PCB

